



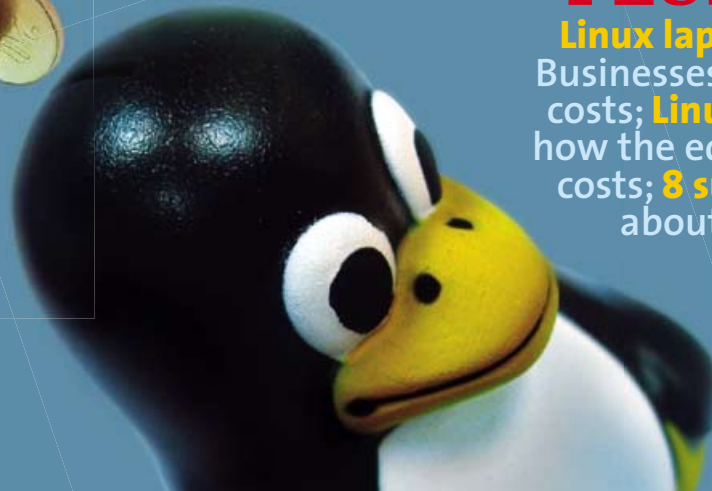
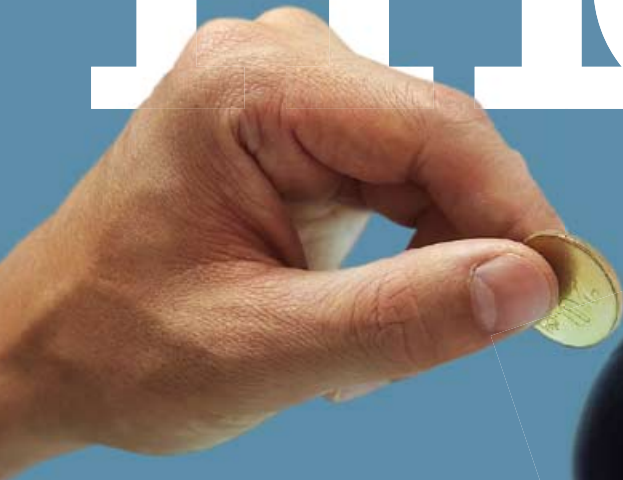
LINUXWORLD

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Open source saves money



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EDITORIAL

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Back to the grass roots



My first brush with computers was in the late '80s during my school days.

The computers I grew up with had boring monochrome screens, limited functionality, no multimedia; no internet, e-mail or chat; no cool applications, they were expensive to buy and we had rationed time in our lab. I couldn't modify, change or tinker with them -- in short they curtailed my fidgety imagination. And sadly, they also dashed my dreams of becoming a programmer.

A few weeks ago, I read a report by the British Educational Communications and Technology Agency (BECTA), which stated that the cost per PC for primary schools in the UK using open source software was half that of those running proprietary software, and 20% less for secondary schools.

The report, a result of 48 schools surveyed in the UK disproved that open source software is harder to support and went on to say that it instead cut support costs by up to 60%.

Interestingly, we're also covering four large scale projects across the US, India and South East Asia to bring Linux to the masses. These initiatives promise to bring Linux powered notebooks and desktops for as low as \$100 to \$250 for the common man.

Though these products are targeted at the masses, I see no reason why they can't be used by SMBs, the government, schools and even larger enterprises to cut costs.

Personally, these two developments have got me excited.

Linux and open source, gives freedom, functionality that any fertile imagination would want to have. It encourages everyone to work together for the greater good, and sure even make some money. It's cheap (almost free) meaning Universities can save lot of money; students can play with it, it's multimedia rich; its network enabled; they can explore it and make it their own, which is not the case with closed operating systems.

Just imagine: everyone regardless of who they are having access to reliable and affordable computing services; students having the freedom to play out their imagination. The possibilities are endless.

Not surprisingly, companies like Microsoft, Dell, Sun Microsystems, Google, Yahoo, Netscape, Napster and even Linux or FreeBSD were started by enterprising college students or as University projects.

If we encourage open source and Linux in the learning space, involve more young people, who knows where the next big thing will come from?

Regards,
Maddy Reddy,
Editor
maddy@cpidubai.com

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Christopher Koch is the Executive Editor of CIO magazine, an IDG publication.

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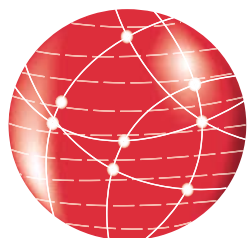
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LINUXWORLD

MIDDLE EAST & AFRICA

THE VOICE OF THE OPEN WORLD

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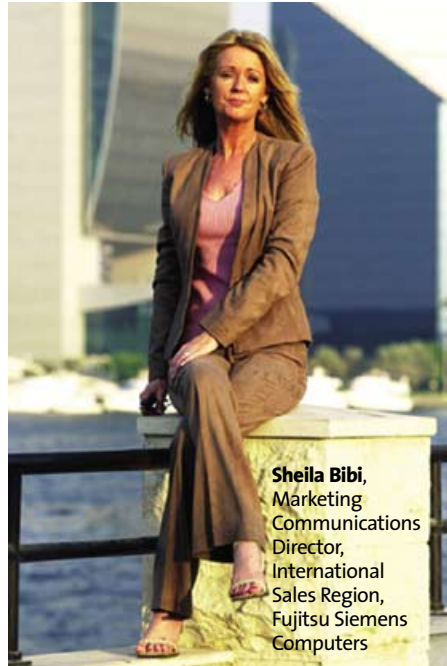
FSC receives Novell Technology Partner of the Year Award

➤ Fujitsu Siemens Computers (FSC) was recently presented with the Novell Technology Partner of the Year Award for operational excellence and its FlexFrame for mySAP Business Suite solution, based on Linux.

The first IT Infrastructure realisation of SAP's Adaptive Computing capabilities, as part of SAP NetWeaver FlexFrame for mySAP Business Suite, is based on the use of grid technology on IT infrastructure. Customers who have implemented FlexFrame for mySAP claim to have achieved up to 60% reduction in Total Cost of Ownership (TCO).

Sheila Bibi, Marketing Communications Director, International Sales Region, Fujitsu Siemens Computers said, "Linux is expanding throughout the global markets, including the Middle East and it is emerging as an important platform for innovation, for the dynamic data center. This is a very prestigious recognition for us, and we are proud and honoured to receive such an award. Our longstanding partnership with Novell is a key component in our strategy to leverage the potential of Linux for our enterprise customers."

"Novell and FSC have collaborated successfully for many years, and are committed to identifying and resolving customers'



Sheila Bibi,
Marketing
Communications
Director,
International
Sales Region,
Fujitsu Siemens
Computers

challenges," said John Rosius, VP Alliances at Novell. "FSC has demonstrated it can provide technology based on leading-edge concepts for practical implementation in today's data center."

The company's Primergy servers currently support both Novell Netware and Suse Linux.



Hoolol unveils Arabised Linux

New Linux suite promises easier migration

➤ Hoolol has introduced its bilingual version of the Linux operating system, HOST at the recent Gitex Saudi Arabia. The regional Linux vendor believes its version of the open source OS stands out for its user friendly graphical user interface (GUI).

Hoolol, which started operations in 2001 in Hyderabad, India has three products namely Exsensys, an ERP product; HOST – Hoolol's Linux based operating system and a soon to be launched RFID product.

The HOST product range includes HOST Desktop, HOST Server, HOST Real Time Linux and HOST Embedded Linux.

The four-year old vendor is targeting the region's government, education and SOHO (Small Office Home Office) users. Hoolol claims its distribution of Linux offers greater stability, reliability, with a user friendly graphical user interface making it easy for Windows users to migrate to HOST-Linux.

All HOST products support Hyper Threading and "plug and play" of hardware through standard USB devices.

RDBMS market action heats up

Linux sales help Oracle database catch IBM

➤ Oracle recovered ground in the worldwide relational database (RDBMS) market last year to draw roughly level with IBM, thanks in part to Linux segment, according to Gartner.

Microsoft also had a good year, increasing new license sales by 18% to be the fastest growing database vendor, although it remained in third place behind longtime leaders Oracle and IBM.

Overall, sales of RDBMS software licenses grew 10.3% in 2004, to \$7.8 b, Gartner said. That compared to growth of about 5%

in 2003 and a decline of 6% in 2002.

IBM overtook Oracle in new license sales in 2001, according to Gartner, thanks partly to IBM's acquisition of Informix. But IBM's database sales grew just 5.8% last year, to \$2.66 b compared with growth of 14.6% for Oracle, which had sales of \$2.64 b. The difference between the two was statistically insignificant, making it too close to declare a leader, Gartner said.

Much of IBM's growth came from the zSeries, or mainframe, version of its DB2 database, although sales of DB2 on Unix also performed well, growing 9%, Gartner said. Sales of Informix, which IBM continues to develop but does little to market, declined 17.6% to \$111 million.

Oracle has been heavily marketing Linux as a

way for its customers to reduce costs, and the strategy appeared to pay off: The Linux database segment remains relatively small overall, accounting for just \$654.8 m of new license sales, but it more than doubled from 2003.

Database sales on Windows were also strong, growing 10% from the previous year to account for \$3.1 b in new licenses. The gains came despite the delays in Microsoft's SQL Server 2005 database, code named Yukon.

Microsoft ended the year with 20% of the database market, or \$1.56 b in new license sales, up from 18.7% in 2003.

Gartner's figures do not include maintenance fees. New license sales are considered a good health indicator, however, as they reflect new business.

Sun open sources Solaris

Hope to breathe new life into OS.

➤ Sun has started releasing part of Solaris to open source. Technologies including the kernel and networking software will be available for free usage under Sun's Community Development and Distribution License, said Tom Goguen, Sun's platform software VP.

The kernel includes features such as predictive self-healing and Solaris containers for isolating an application within the operating system. Also part of the release are system libraries and commands.

Users can download source code, combine it with their own source code and make commercial products out of it. "It's a completely royalty-free open source product," Goguen said. "Our goal is to increase and really drive up the ecosystem



"It's a completely royalty-free open source product. Our goal is to increase and really drive up the ecosystem around Solaris. It's going to be a full, buildable environment. That's perhaps the key thing."

around Solaris. It's going to be a full, buildable environment. That's perhaps the key thing."

OpenSolaris will run on Intel x86 and 64-bit AMD Opteron systems as well as on Sun's Sparc hardware. Sun hopes to profit by offering support packages to what it hopes will become a more popular operating system. Plus, if open sourcing the OS sees its use increase, Sun hopes it will boost demand for its portfolio of other products.

Goguen did his best to downplay the fact that the move has been forced on Sun thanks to Linux' success by claiming Sun itself was started more than 20 years ago through open source technology - BSD Unix. "[BSD Unix developer] Bill Joy, who was one of the founders of the company, arguably could be considered one of the founders of open source software," is the line.

There are markets underserved by Linux, which lacks the higher uses of Solaris such as self-healing and dynamic tracing, Goguen said. Solaris also offers high-end symmetric multi-processing and offers advantages in addressing multi-core chips. "Red Hat's offering is incapable of scaling as well as Solaris today," Goguen said.

Sun hopes OpenSolaris will stem defections to Linux, said analyst Gordon Haff of Illuminata. "In terms of being sort of the mass-market alternative to Linux, that doesn't seem likely to happen anytime soon. But I think Sun's real focus here is more on its customer base and developer community that are still in the Solaris camp," Haff said.

The move is not likely to attract Windows users because Windows is quite a different system from Solaris, Haff said.

Sun still will offer the commercial version of Solaris, but future commercial releases will be based on the development going on as part of OpenSolaris, Goguen said.

Sun made the dynamic tracing feature of Solaris, known as DTrace, available through open source in January. Some administrative and install technologies will be kept out of the OpenSolaris release.

The OpenSolaris Project plan also calls for future releases of test suites, a tool to manage bug and patch submissions, a code management solution, and design documents.



Lay offs at the Linux labs

Torvalds retains job

➤ The Open Source Development Labs, the organisation that employs Linux leader Linus Torvalds, has laid off nearly a sixth of its staff as part of a shift to new priorities. The group cut nine of its 57 staff and contractor positions

The cuts affected several programmers who worked on the open-source operating system as well as staff in sales, marketing, business development and internal computer operations.

"We are a small enough organisation that what would be a small change in focus for a bigger company has a large effect on us. New priorities include the establishment of a European office and an expansion of Asian operations into China and Korea from today's base in Japan," said Nelson Pratt, Director of Marketing.

OSDL's CEO Stuart Cohen who confirmed the news to the press said the nonprofit will continue to employ Torvalds, Andrew Morton, and Chris Wright, all three key Linux kernel developers amongst others. Post-restructuring, more than half of OSDL's employees are engineers.

Novell Acquires Immunix

> Novell has acquired Immunix, a provider of host-based application security solutions for Linux. Immunix is the creator of AppArmor, a Linux application security system. The new product, to be called Novell AppArmor powered by Immunix, protects both the Linux operating system and applications from external or internal attacks, viruses, and malicious applications.

"Businesses understand that attacks on their mission-critical applications can hit their bottom line unexpectedly and with grave results," said Novell Chairman and CEO Jack Messman. "Only Novell AppArmor provides an enterprise-class security system for Linux that is easy to implement, deploy and maintain. Novell customers will sleep better at night knowing their applications are protected."



Jack Messman,
Chairman and
CEO, Novell

HP ships 1 million Tux servers

Company tops nearest competitor by 45%

\$83.3 b HP has set an industry-first milestone by shipping more than 1 million Linux servers to customers since 1998, 45% more than any other major hardware vendor.

Citing data from IDC's latest Worldwide Quarterly Server Tracker, HP claims to have led the worldwide Linux server market for 29 consecutive quarters. In the first quarter of 2005, HP grew 2.5% points faster than the market in units on a

year-over-year basis, shipped nearly 10 times as many Linux servers as Sun, led IBM by almost 8% points in quarterly revenue share and outpaced Dell in both units and revenue.

"The numbers don't lie. Customers are clearly turning to HP as their trusted partner for deploying integrated Linux and open source solutions," said Martin Fink, VP and General Manager, Open Source and Linux Organisation, HP.

Mandriva acquires Lycoris assets

> Mandriva, has purchased several assets from Lycoris, a North American Linux distribution for home users. As part of this agreement, Lycoris' founder and CEO Joseph Cheek is joining Mandriva to develop a new Linux desktop product.

Since its inception five years ago, Lycoris has been developing Linux versions targeted to the consumer market.

The vendor has also developed products for the mass market, such as a Tablet Edition and a Pocket PC edition of Lycoris Desktop/LX, which led to several partnerships with hardware vendors in Asia.



The joint plan is now to develop a new product that will be the convergence between our Mandriva Discovery product and Lycoris Desktop/LX. Both teams have already started working on this product.

Lycoris currently has more than 20,000 paying members in its customer base.

Joseph Cheek joins Mandriva to head the program that will drive these two projects.

They bring a unique expertise in terms of desktop tools and some excellent products. Our goal is now to provide a path moving forward to the thousands of Desktop/LX users," said François Bancelhon, CEO of Mandriva.



Former Linux architect moves to Windows

Goodbye Gentoo, hello Microsoft

> Daniel Robbins, the founder of Gentoo Linux and its former chief architect, has accepted a position at Microsoft.

In a note to the Gentoo Foundation community, Robbins said "I am leaving Gentoo and will be helping Microsoft to understand Open Source and community-based projects."

Microsoft confirmed that Robbins began work at Microsoft's campus in Redmond. Sources at Microsoft said Robbins is working with Bill Hilf.

Hilf is Microsoft's lead program manager for its Platform Strategy organisation. There, he leads Microsoft's Linux and Open Source Software technology group. Before coming to Microsoft, Hilf drove IBM's Linux technical strategy for its emerging and competitive markets organization. Robbins' title is program manager for the Platform Strategy team.

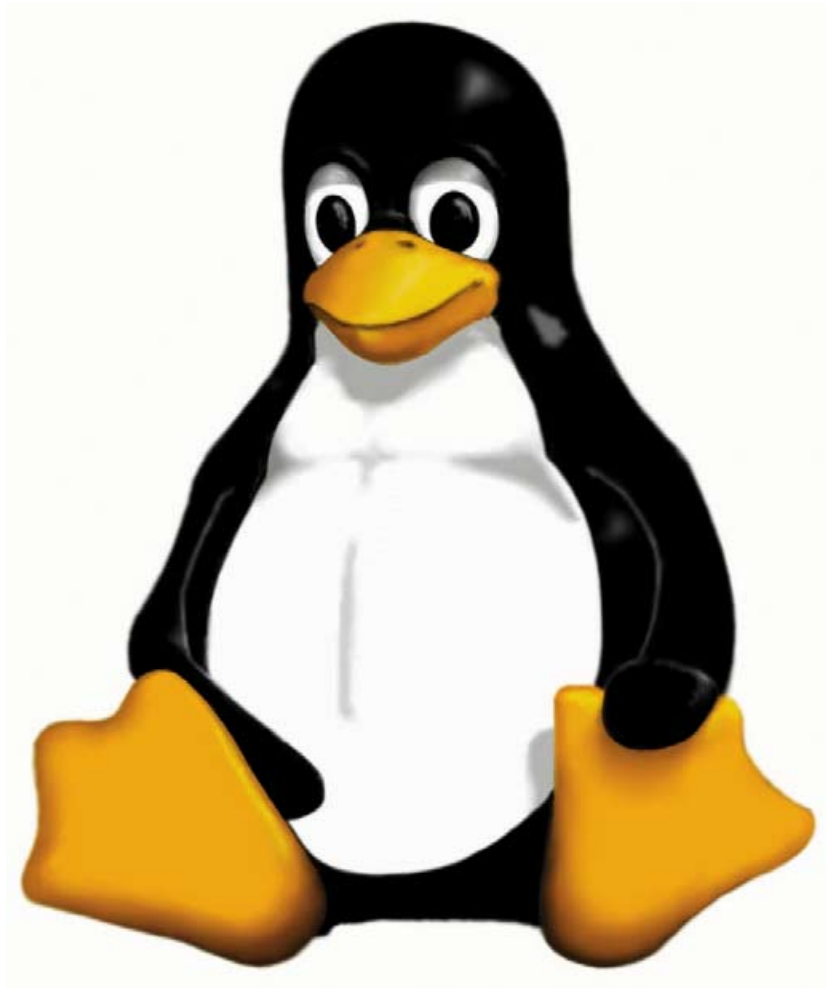
Robbins had been moving away from his distribution for some time. Last April, he resigned from development responsibilities and his role as Chief Architect for Gentoo.

At that time, he also began setting up the non-profit Gentoo Foundation, which now runs Gentoo development.

Before joining Microsoft, Robbins finalised the transfer of Gentoo's intellectual property, essentially Ebuilds copyrights and other software, as well as soon-to-be trademarked Gentoo logos to the Foundation.

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Taiwan Mobile launches 3G network, with Linux



Taiwan Mobile, one of Taiwan's biggest mobile phone service providers has launched a trial of its 3G (third generation) network using a Linux as its backbone.

But while Linux has been Taiwan Mobile's main operating system for the past few years, its future is less certain with 3G because it is difficult to ensure the ongoing development of Linux applications, said T.C. Juan, VP of new technology development at Taiwan Mobile. "We decided to use Linux a few years ago because we needed a stable operating system that would not go down. At that time, Linux was the best choice," Juan said.

3G mobile systems change things a bit because service providers will depend more and more on outside vendors to continuously develop and upgrade the software applications that keep users

tuned in to 3G services. "Linux is already a proven and workable operating system. But shareware and Linux don't have the resources to do the continuous upgrades and improvements," Juan said.

Taiwan Mobile depended on outside vendors for most of the initial services being offered in its trial run, like video calls, video streaming and Internet access. It will most likely have to increasingly turn to vendors for the software that runs such services, Juan said.

Some help may be on the way for Linux, however. Taiwan Mobile's main 3G equipment vendor, Nokia, said that it will allow all of its patents to be used in the further development of the Linux kernel. Open source software communities foster innovation and help in the creation and adaptation of technologies, the company said in a statement. It said it hoped other supporters of Linux and open source would follow its lead.

Nokia's support may help developers to avoid patent conflicts and could provide a boost for companies that offer support and upgrades for Linux applications used with 3G services.

For 3G service providers, the main concern is developing popular services and ensuring they can be used across competing 3G networks, Juan said. Three main players control most of Taiwan's mobile phone market, and they have been trying to develop a standards group aimed at ensuring their services work on each other's networks.

Indian government gives away free CDs



The Indian government is distributing free CDs of localised open source software like Firefox,

OpenOffice.org and other free applications to encourage the use of computers across the country. The decision to ship free software in this way likely will be a blow to Microsoft, which plans to release a low-cost version of Windows in India soon. Microsoft originally hoped to release its Windows XP Starter Edition--a low-cost, feature-restricted version of Windows XP--by the end of March, but it's now aiming for a Q3'05 release.

Cuba embraces Linux



Cuba will gradually switch to the open source Linux operating system for its state computers,

eliminating its exclusive use of Microsoft Windows, the government daily Juventud Rebelde reported.

Roberto del Puerto, director of the state office of information technology, told the daily that Cuba already has about 1,500 computers using the Linux system, a free operating system whose technical data is open for public viewing.

Del Puerto said his office was working on a legal framework that would allow the replacement of the Windows system.

Although Windows is used on about 90% of the world's personal computers, some governments and large organisations have switched to the free Linux system or have threatened to do so to get discounts.

EU studies impact of software patents on open source



Researchers at a Dutch university are conducting a study for the European Commission on the effect of software patents on innovation -- but the Commission is pressing ahead with plans to introduce the patents in Europe without waiting for the results of the research to be published.

The University of Maastricht in the Netherlands began their three-year study last December, examining the legal, technical and economic effects of software patents.

The study will take a broad view of the

economic consequences: "We are doing a survey not so much on patents as on innovation, and not just software," said Rishab Aiyer Ghosh, program leader for studies of free and open-source software at the Maastricht Economic Research Institute on Innovation and Technology (Merit).

The study will not finish until late 2007, although the Merit team will release an interim report on its findings about patents: "We will be publishing something towards the end of this year," he said.

Even those interim findings on software


patents may arrive too late to influence relevant European legislation, however.

While Ghosh's research is supported by the Commission's Directorate-General for the Information Society and Media, another branch of the Commission, the Directorate-General for the Internal Market, is pressing ahead with hotly contested legislation that will harmonise the way in which software can be patented throughout the 25 member states of the EU.

Does it seem odd that the Commission would ask for a report on whether software patent legislation is good or bad for innovation, and then not wait for the answer?

OPEN \$OURCE \$AVES MONEY

The financial services industry, which encompasses banks, asset management firms, stock exchanges, insurance companies and credit agencies, has long sought operational efficiencies while also trying to drive down costs. This cost conscious vertical is now turning to Linux and open source to achieve, just that.

A close-up photograph of a human hand holding a small, gold-colored coin between the thumb and index finger. Below the hand, the head of the Linux mascot, a black and white penguin with a yellow beak, is visible. The penguin is looking up towards the coin.

➤ Support for Linux in the traditionally conservative world of financial services has more than doubled in the last year according to financial technology researchers Finextra. The market intelligence firm substantiates it by stating that support for open source from mainstream suppliers has boosted the number of financial institutions using Linux from 27% last year to 58% in 2005.

In fact, the growing support for Linux has been the single biggest technology change in financial organisations over the past 12 months, say the researchers writing in the Financial Technology Strategies 2005 survey.

Phil Dawson, VP, enterprise Server research, Gartner EMEA agrees. "There is lot of momentum in this vertical and its moving away from Sun's Solaris. Windows is still strong, but most of the migration is from Unix to Linux because of the ease." Dawson's firm predicts that by the end of 2005, Linux adoption will reach 40% among all financial services firms.

The first phase

When few financial companies discovered that by combining free open-source code, low-cost x86 chips, they could get similar output that rivals many expensive and proprietary Unix and mainframe servers, a few embraced it to cut costs. Others did so owing to its portability;

few to standardise their fragmented server environment; and others to overhaul their aging legacy systems.

For instance, Brown Brothers Harriman & Co, the oldest and largest partnership bank in America put Linux on its IT radar two years ago. Before the move began, Brown Brothers supported z/OS, OS/400, Unix and Windows. The company added servers rapidly throughout 2003, putting stress on its data center operation and sparking cost containment, security and stability problems.

"In the first half of 2003, pockets of Linux on x86 hardware found their way into our business, starting as proxy servers, DNS servers, some Web servers, a firewall manager and an Internet gateway," explains Jeff Teisch, Senior VP, Infrastructure at Brown Brothers. "The benefits [of moving to Linux] have been cost avoidance of about 85 servers. Stability and security were also addressed, and we were able to utilise our in-house skill sets," adds Teisch.

The recent Linux World Summit in May confirmed the headway Linux has made from being a menial platform for non-mission-critical

functions when CIOs from the world's largest financial companies discussed their experiences.

Aaron Graves, a Senior VP at Citigroup's technology infrastructure group in New York, said that while Citigroup decided to stick to its existing mainframes, it looked at Linux to bring distributed workloads into its mainframe hardware environment. Citigroup looked at Linux as a way to get more use out of its mainframe platform by running many Linux virtual servers on one IBM box.

Furthermore, the company relies on an IBM zSeries mainframe running IBM's DB2 database and S2 Systems' Open/2 enterprise payment software on top of Suse Linux to automate transaction processing. When a consumer makes a purchase online, chances are it's coming through this system.

But before adopting Linux, the company spent months working out legal issues related to a move to open source, said Aaron Graves, VP of technology at the New York firm. "It took us a while to understand what a support contract for open source means. It was really a different model," he said.

Gartner predicts that by the end of 2005, Linux adoption will reach 40% among all financial services firms.



Phil Dawson, VP, enterprise Server research, Gartner EMEA

After Grave's IT team, IBM and Suse configured multiple Linux instances across multiple mainframes and multiple databases, Citigroup's back-end Linux environment now processes credit card transactions at a rate of between 90 and 120 transactions per second per Linux instance.

Witnessing the excellent results, Citigroup is looking at a move to a 64-bit Novell's Suse Linux environment.

Unix to Linux

Similarly Joshua Levine, CTO and operations officer at E*Trade Financial choose Linux three years ago to consolidate and cut costs of their Sun platform, when the dotcom bubble burst. "We wanted to improve our operating margins. So we looked at Windows, but it would have been too expensive. Linux was the only other logical choice."

The result was a series of \$3,800 dual-processor Linux-based servers that could operate at twice the speed of a \$250,000 Sun 6500 running 10 processors. To tackle the onslaught of cheap Linux commodity servers, Sun is now offering Solaris on lower-cost x86-based servers, powered by chips from AMD.

"The way Linux is supported is incredible. The nice thing about Linux is that it can be supported in many ways, from both vendors and the community, and there is no mystery around it," says Levine.

When quizzed about the 'risk' of using open source and Linux, Levine replied, "We manage \$100bln dollars in assets, and we're regulated by pretty much everyone on earth, what you think? If we foul up, I'll be on CNBC that night explaining my mistake."

Vendor action

Even Nasdaq Stock Market, the bellwether for IT savvy companies has scrapped its proprietary trading system in favour of an open-source system from electronic broker Instinet. The new Instinet platform now supports more than 100 million transactions per day, with peaks of over 20,000 per second. Reuters is also shipping a Linux version of its financial software.

HP, Novell and Red Hat have teamed up on a new Linux financial Web site -- www.linux-versiba.de, a central platform where banks and insurance companies can receive in-depth information and discounts on Linux.

IBM and Red Hat have also joined hands to woo users of Sun's Solaris operating system over to Red Hat Linux. Big Blue is working with 22 financial services software vendors, to help them port their Solaris products over to Linux. To date, these vendors have moved 33 of an anticipated 48 total applications over to Linux.

All this vendor traction even outside North America seems to be paying off.

Banking on Linux

Numerous banks around Europe are lapping up Linux to cut costs and beef up security. Point in case: Italy's PBU Banca, which announced a deal with Red Hat to migrate all its desktop computers and servers to Linux. Even Germany's biggest financial services company Plus Finanz Service GmbH has migrated its core web services



David Brierley, Regional Manager,
Cognos Middle East

infrastructure to Linux with 30% less than a Unix system would have cost.

China's biggest bank, ICBC is deploying Linux across its network of 20,000 branches for all of its front-end banking operations over a three-year period. (See related story)

With global financial power houses putting their weight behind open source, vendors are now seeing the ripples even in the Middle East. "We started supporting Linux here since last year. The major reason was that the top 10 American banks and nine of top 10 European banks; many large Middle East banks are Cognos customers. From our feedback with them, most of the conversations on their technology investments revolved around Linux," says David Brierley, Regional Manager, Cognos Middle East.

In the region too, several banks have set the standards by embracing open source, with or without vendor support.

For starters take Habib Bank AG Zurich (HBZ). The 38-year old bank has taken a maverick approach, when it got its hands dirty on Linux, more than six years ago. After a few years of testing it in select areas as skunk works projects, HBZ made Linux the platform of choice in late 2001.

HBZ purchased a copy of Suse Linux (less than \$50) and made the move gradually – fast forward – it now runs everything from the teller, more than 450 desktops and 36 servers across 50 branches and subsidiaries in 10 countries – all



Syam Pillai,
Global IT chief, HBZ

manned by its 10 IT staff relying on Linux.

Besides using standard open source applications such as Open Office suite, MySQL, JBoss, HBZ also developed multiple inexpensive machines based on LVS (Linux Virtual Server) technology to cut down on server costs.

"After the [complete] migration three years ago, we have forgotten about our Linux implementation. Many of the end-users and staff in our bank still don't know whether we are running Linux – it's seamless for them. They don't need to know, what the server O/S is," exudes Syam Pillai, Global IT chief, HBZ.

When asked about security, Pillai says with confidence, that the very openness of Linux makes it very secure. "We found Linux more secure, because we know it inside out. In the case of Windows or any closed source OS; we don't know what the issue is until the vendor reports it or some security firms discover the vulnerability. With Linux everyone is actively scrutinising Linux, the minute an issue crops up it's solved in hours or a few days. Even support is not an issue...most of the problems we have are sorted out for free by the open source community."

Despite his enthusiasm for Linux and widespread adoption of Linux globally, Pillai admits Linux uptake is conservative with the region's financial sector. He boils it down to complexity and mindsets.

Linux desktops make an entry

When Ireland's leading bank, Allied Irish Bank (AIB), is disposing of the Windows PCs that its tellers used on their desktops in favour of Linux-based terminals, analysts said an IT insurgency was emerging in the financial services sector.

AIB, based in Dublin, signed a deal with Sun Microsystems to move the desktop computers of its 7,500 branches to the Linux-based Java Desktop System (JDS), Release 2.

Working with a local partner, Horizon Open Systems and Sun will bring the systems online in Ireland and UK by the end of next year, according to Sun. JDS will power terminals being installed as part of the bank's new branch banking platform, which will be the tellers' interface with all banking applications.

The Irish bank serves many rural communities, and the small businesses there have a need for speed in customer services just like larger firms. "It is imperative that financial institutions assist farmers to grow and develop," says Michael Dowling, head of agricultural strategy at AIB.

The Linux-based desktop systems could banks such as AIB to accomplish that in a number of ways.

For fixed-function applications, like the work that tellers do, Linux could be ideal to slash deployment and operating costs. The bank can standardise on x86 servers with Linux, which will ease administration woes. The user does not need a lot of flexibility, since they will use only a core banking application and a free office suite, such as Open Office during the working hours. Even security isn't a concern, since Linux doesn't have any major worrisome virus or spyware issues.

Banks like AIB could well be paving the way for Linux desktops.



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For global banks migration to Linux can be an arduous task considering their scale and complexity. For instance, ABN Amro reportedly has over 1500 different banking applications, 36 different databases across multiple platforms. Just to manage such a monstrous IT infrastructure can be a challenge.

"IT departments of most financial firms are decentralised so it's hard to coordinate any R&D work or experiment. Most of their efforts go into maintenance, internal support and upgrading existing systems...so Linux isn't exactly a high priority. The IT work is also sometimes outsourced from vendors and systems integrators. If the vendors aren't active in Linux, they don't bother," concedes Pillai.

"Managing all these multiple vendors and applications is in itself a challenge...getting all the vendors to support their Linux migration and ensuring that it doesn't affect the operations and ensure savings is very hard."

Pillai says for most firms standardising on Linux is not a burning issue, since it could take years – they instead turn to open source for well

For medium sized banks such as HBZ where strategic decisions are taken from Dubai, migrating to Linux was considerably easy, since HBZ relied on one core Java banking application, which could be easily ported onto Linux he adds.

Having seen the adoption of Linux in the region first hand, Pillai says things are now changing. "The past couple of years, things have changed...more vendors are supporting Linux and more firms are now considering Linux. With more success stories on Linux from the US and Europe, more and more banks here are looking at Linux actively."

Market trends

I-flex Solutions, a provider of IT solutions to the financial services industry through its FlexCube portfolio seems to agree. Vinod Totawat, I-flex's regional manager says: "Although our products are qualified on Linux, we don't have live customers. There's lot of academic interest, IT managers are inquisitive but we are yet to see serious deployments."

Totawat blames this on the market dynamics.

"With more success stories on Linux from the US and Europe, more and more banks here are looking at Linux actively."

tested non-mission critical areas to minimise any risk and cut foreseeable costs.

A few IT managers working for multi-national financial firms with regional presence, who didn't want to be quoted, confess that even though they want to break the mould, they cannot take strategic decisions, and are forced to adopt a conservative approach to Linux, since IT decisions take a while to trickle down from their head office.

From a vendor perspective, David Brierley of Cognos has seen this first hand. "For many MNC firms, corporate IT decisions are taken in America or Europe. The Middle East branches of the MNC banks are never the first. Local banks don't seem to be cost conscious as the foreign counterparts. That could be because of a different mind-set, or less competition. It doesn't mean they are not interested or there's no demand, but at the moment it's still a minority."

Vinod Totawat,
Regional Manager,
I-flex



Why financial firms are choosing Linux?

COST

Lower licensing fees than Unix, Windows Server 2003 and other alternative operating systems; its ability to run a wide range of commodity hardware means cheaper alternatives to buying proprietary systems. In most cases open source software is free.

PERFORMANCE

Ability to provide high performance with small footprint. Linux clusters, grid computing, virtualisation and now blades provide supercomputer-type performance at fraction of the expense with small foot print.

OPENNESS

Reduces leverage large vendors have traditionally had on users (by closely coupling hardware and the OS); enhances competition, promotes open environment and vendor neutrality. Firms can download source code and customise it.

SUPPORT

Most major hardware vendors and financial software vendors now support Linux, which wasn't the case a few years ago. Firms can also choose support in-house support, from the community or the vendor directly.

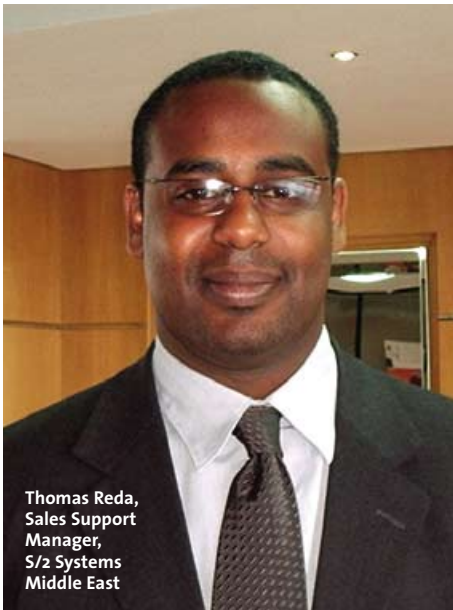
Source: Tower Group/ LWMEA

"The size of the western market is huge; availability of qualified people is plenty; most firms there have large in-house IT teams and budgets, they can experiment and do lot of development work. The work culture here [the Middle East] is more operational and doesn't encourage experimenting or trying on new systems. Unless they use open source first hand, it will be hard to make a sell. So to play safe, firms here are using Linux on the periphery."

As such Linux's competence in handling network services has never been debated, its maturity in mission critical areas such as transaction processing have been under shadow. That's changing now discloses one vendor.

"A number of large US banks [Citigroup covered above] are already running our mission critical payment systems on Linux. In the region, we have seen a strong interest by banks to use Linux. One of the largest banks in the UAE that we are talking to has implemented a mission critical system on Linux, three years ago. Now, they are very keen to cover other departments on Linux," says Thomas Reda, Sales Support Manager, S/2 Systems Middle East.

S/2 Systems (recently acquired by Transaction Systems Architects), which serves more than 12 local customers and some 450 customers globally has traditionally shipped its OpenN/2 enterprise payment transaction platform on mainframes. Seeing strong customer demand,



Thomas Reda,
Sales Support
Manager,
S/2 Systems
Middle East

S/2 now supports Linux and x86 hardware across the Middle East since last year.

With more active local support from ISVs and hardware vendors, banks such as Jordan Commercial Bank in Amman have rolled out Linux across 24 of its 26 branches the past year. The new open source system powers everything from its tellers to servers.

Barring a few innovative firms who have been vocal about using Linux most others who are still using Linux for menial tasks, the penetration is limited. Sandeep Chhabra, Manager for Telecom & Financial Services Industry, HP Middle East voices his concern: "In the Middle East Linux is being used more for tactical and technical reasons than strategic. The benefits of open source are not being fully exploited by companies here. They are restricting the potential of Linux."

Chhabra continues, "Open source gives customers the capability to tailor it the way they want. It's a great feature. There's very little tailoring work done. Customers mostly pick up shrink-wrapped middleware, customise it through a third-party and deploy it."

However, the number of success stories is scant. Vendors claim that scores of firms in the region are using Linux in some form or the other, but these users loathe giving testimonials on Linux and avoid publicity for competitive reasons. Their biggest concern? Most of these financial firms have heterogeneous environments and by endorsing Linux publicly, they don't want to strain relationships with other OS vendors.

Despite all the apprehensions, shy adoption, analysts such as Dawson from Gartner are optimistic about the prospects. "Although the Linux penetration isn't aggressive, in the Middle East but what's interesting is that could very quickly be. If Linux is gaining maturity elsewhere, then the acceptance will be quicker or the adoption process will be faster. In two years from now, things could be radically different," adds Dawson.

Who's running Linux?

- Credit Suisse First Boston's Agora Trading System runs on Linux
- Morgan Stanley runs 1,000 servers on the platform
- Lehman Brothers' trading and risk analytics run on Linux;
- Schwab runs its Velocity trading system on Linux
- Goldman Sachs has multiple proprietary software applications supporting trading on the platform;
- Dresdner Bank runs risk applications on it; and Charles Schwab converted Schwab.com to Linux in June.
- Chicago Mercantile Exchange runs off Linux
- Jordan Commercial Bank powers its 23 branches on Linux
- Habib Bank Zurich runs its entire infrastructure on Linux
- Standard Chartered Dubai, Emirates Bank International run specific departments off Linux.
- E-Trade Financial and Citigroup run a large chunk of their infrastructure on Linux
- NYSE's Linux system TradeWorks handles 1.6 billion shares traded daily
- Dresdner Kleinwort Wasserstein runs its portfolio risk management on Linux, using 80 Intel-based xSeries 4000R servers deployed in Linux clusters
- State Street runs IBM's DB2 on Linux
- Nasdaq Stock Market has scrapped its proprietary SuperMontage order entry and execution system in favor of an open-source system from electronic broker Instinet.
- Plus Finanzservice GmbH, one of Germany's biggest financial services companies has migrated its core Web services infrastructure to Linux
- Ireland's leading bank, Allied Irish Bank (AIB) is migrating its desktops in 7500 branches to Sun's Linux based desktop system (JDS)



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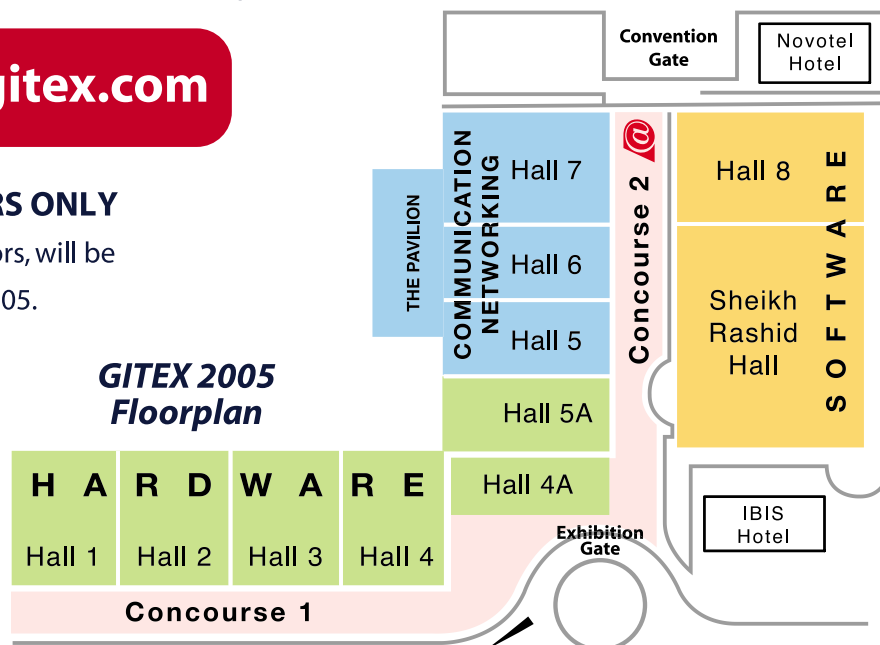
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China's biggest bank makes switch to Linux

China's biggest bank plans to deploy Linux on servers across its network of 20,000 national branches in a project that may be the biggest Linux deployment yet seen in China, according to an executive involved with the deal.



Under the terms of an agreement, the Industrial and Commercial Bank of China (ICBC) plans to gradually roll out TurboLinux's 7 DataServer operating system for all of its front-end banking operations over a three-year period. Financial terms of the deal were not disclosed.

What makes this deal special is its size. With \$640b in total assets, ICBC is China's biggest bank, serving 100 million individuals and 8.1

million corporate accounts at more than 20,000 branch offices across China. When the project is completed, many of ICBC's 390,000 employees will be accessing applications hosted on Linux servers on a daily basis.

ICBC chose Linux in part because its existing front-end applications, which were developed in-house, run on SCO Unix, and migrating them to Linux was determined to be an easier upgrade

path than switching the applications to Microsoft's Windows operating system, according to Claude Zhou, GM of Turbolinux China.

The Chinese bank has been granted a site license and front-end applications based on TurboLinux 7 DataServer. Implementation will be rolled out on a 'step-by-step' basis to all of ICBC's 20,000 offices, Zhou says. ICBC employees will access the applications from terminals. "This is the biggest Linux implementation in China," claims Zhou.

ICBC is not the only one of China's four main banks to have decided to deploy Linux. For example, Bank of China has deployed Linux distributions from Turbolinux and Red Hat in regional projects.

More banks are expected to follow ICBC's lead with large-scale Linux deployments, according to Zhou. Agricultural Bank of China, another of the country's top four banks, is expected to announce within the next month a tender for a Linux site license that is similar to the ICBC project.

The fourth major bank, China Construction Bank, is also expected to announce sometime this year plans to move its IT systems to Linux, according to China's state-run media.

The shift to Linux is driven by the banks' need for better software performance and better vendor support, says Nielse Jiang, an Analyst at IDC, in Beijing. Currently, most of these banks are running their applications on SCO Unix and they are looking to upgrade their systems. "In China, SCO

The shift to Linux is driven by the banks' need for better software performance and better vendor support.

Unix offers very weak support for customers; they have so few employees," he claims.

The banks have also opted for Linux because of lower operating costs and the relative ease of porting their applications from Unix to Linux, Jiang says. They also pay close attention to what the other banks are doing. "If one successful case has been implemented, the other banks will consider doing that," he says.

Italian Bank deploys enterprise Linux across the board



> BPU Banca migrates from Unix to Red Hat Enterprise Linux to reduce workstation cost by 50% and avoid vendor lock-in. Red Hat, has announced that BPU Banca, the operational parent bank of the group Banche Popolari Unite, Italy's seventh largest banking group and first co-operative credit banking group, has chosen to implement Red Hat Enterprise Linux across its desktops and servers.

The bank is migrating all of its 8,000 Unix workstation clients to Red Hat Desktop. In this project BPU Banca will replace Sun hardware with Intel-based PCs to achieve combined hardware and software cost savings of about 50%.

The migration of its systems from Unix to Red Hat Enterprise Linux also delivers vendor independence for both hardware and software, assuring BPU Banca greater flexibility when

implementing infrastructure solutions that comply with new industry trends and best practices. Finally, the migration will enable the use of PCs in dual-boot mode to support Linux and Microsoft Windows without additional cost.

"This project is one of the most important migrations to Linux in the Italian financial sector," says Roberto Semplici, Account Executive Red Hat Italy. "BPU Banca is a clear proof-point of the advantages guaranteed by the Red Hat Enterprise Linux product family, opening the path to future Linux

implementations in this market sector."

Using Red Hat Network for the maintenance, asset management and security management of the Red Hat Enterprise Linux systems will allow BPU Banca to easily manage groups of servers and workstations from virtually anywhere via a Web interface. BPU Banca will conclude its migration from UNIX to Red Hat Enterprise Linux by the end of this year.

Future plans include widening its migration to Red Hat Enterprise Linux to encompass the group's entire server infrastructure.

"This project is one of the most important migrations to Linux in the Italian financial sector."

— ROBERTO SEMPLICI, ACCOUNT EXECUTIVE RED HAT ITALY

GETTING THERE: MIGRATING TO OPEN SOURCE

While a recent Forrester Research report found that roughly 40% of the 100 US companies surveyed had no disappointments that still leaves six out of 10 perhaps wishing they had done things differently.

How can you better your chances of success? Read on to learn what open source users and industry watchers advise.

1. Getting started

While open source software can be quickly downloaded and put to use, industry watchers say rollouts should be approached in much the same way as they would with commercial applications. That means assembling a proof-of-concept plan and determining long-term integration, support and labour costs.

"It's a cultural difference. IT people

wanting to bring open source in-house don't always approach it as they would other technologies," says Mark Douglas, Vice President of engineering and operations at online dating company eHarmony.com, an active Linux user. "They need to put together a pilot and show the reasons why open source is better than commercial products."

Linux and Apache might have flourished in one-off rollouts, but users



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say a full-blown migration to open source needs to be driven by more than experimental curiosity.

"Teams will know they are ready when commercial software just never meets all of their needs. Those gaps end up being a critical factor in the decision to go open source," says Andres Andreu, Technical Director of Web engineering and applications for advertising giant Ogilvy & Mather in New York.

2. Support scheme

One Catch-22 with open source centers on support. Sure, there are numerous sources for help with many of the 70,000 open source components available for download on the Internet, but how good are they?

"There may appear to be support, but it really needs to be investigated beyond surface appearances," says Michael Goulde, a Senior Analyst at Forrester. "You have to determine if you are choosing a viable product with long-term development plans and identify the development community upfront."

EHarmony's Douglas says with every type of open source software, there is most likely a vendor committed to providing support. IT managers can contact vendors such as Red Hat and Covalent, for example, to get support contracts that rival those for commercial software.

"It hasn't been any different than when I wanted to get [BEA] WebLogic support; I contact the salespeople and they get me support," Douglas says.

3. Learn the licensing

Open source doesn't always mean free.

"Deciphering the different license models for open source, and even commercial, software can become a bit of a train wreck," says Sam Lamonica, IT Director at California based general contracting and engineering company Rudolph & Sletten. "You have to figure out which licensing scheme is going to work for your company and how you are using the open source code."

The Open Source Initiative lists dozens of license models it has certified on its Web site (www.open

source.org), including the General Public License (GPL) and Mozilla Public License (MPL).

For example, GPL permits unlimited free use, modification and redistribution of source code without also sharing the source code and explicitly publishing the copyright and warranty notice.

4. Go to the source

One of the biggest perceived benefits of open source is the flexibility of having access to the source code. But there are two caveats: One, IT staff needs to have the skills to write scripts and make the software work for them; and two, IT managers will have to take full responsibility when the manipulated code doesn't live up to original expectations.

"You may not get all of the commercial refinements you are used to, so you really have to understand software, data and architectures," Ogilvy & Mather's Andreu says. "You will cut the umbilical cord of vendor accountability in this realm."

5. Tying it all together

The differences in open source code from developer to developer can make it difficult for a company to quickly adopt and integrate a complete open source stack.

One route is to follow the LAMP model, an integrated stack that includes Linux, Apache, MySQL and programming languages Perl, PHP or Python. Start-ups such as OpenLogic, Optaros and Spike Source say they will do the integration work for IT managers and provide services or stacks of software that fit the LAMP model.

"Open source can become a real time sink if you are working to tie multiple pieces together," says Rick Beebe, Manager of system and network engineering for ITS-Med at the Yale University School of Medicine. "Many open source projects are built on

other open source projects and the hidden costs with open source is directly related to the time it takes to work out the integration."

6. Security concerns

Open source advocates contend that the technology is more secure than commercial offerings, but open source software has susceptibilities of its own.

According to Analyst Laura Koetzle, open source





developers are not as motivated by customer satisfaction numbers or the potential of hackers as commercial vendors to participate in vendor-sec mailing lists to report bugs and holes in the software. "Open source maintainers will vary widely in the speed and quality of their responses to security vulnerabilities," she writes in a Forrester report.

Koetzle says open source software passes the "good-enough security tests" that most commercial products do, but she adds that you can take extra measures to ensure the security of open source software on your network.

To start, standardise on one distribution of

source code. Software release management processes also should be applied. And you should consider using tools such as GNU privacy guard, a free replacement to the data encryption program PGP (Pretty Good Privacy).

7. Make management a priority

While management is historically an afterthought when rolling out new technology, it shouldn't be with open source. Yale's Beebe suggests standardising open source rollouts to help simplify management and ensure better performance later. "It can get very confusing, fast if you have different

distributions installed," he says. "With commercial software, there is someone you can call and have them worry about why performance isn't up to par. But with open source, you need to get a handle on it yourself."

One 'gotcha' can be assuming that a Windows application will perform the same if moved to Linux.

"It pays to check it out ahead of time," says Kerry Miller, Network Engineer at First Victoria National Bank in Houston. "We like to run things in a test environment for a while first, then ask a couple of users to try it out before we unleash something on the whole bank."

LOW COST LINUX PCs

Linux for the masses

Vendors are all set to unveil of raft of low-cost Linux based laptops, thin clients and desktops priced at under \$250 with bundled software for the mass market. This could prove to be a boon for small and medium sized business, governments and even enterprises looking at cutting IT hardware and software costs.

➤ Aiming for a share of the low-cost computer market in developing countries, a number of vendors are introducing specially designed products that will offer users lower startup costs, and easier manageability and maintenance. The products, based on Linux, are expected to go on sale this quarter.

Desktop PC sales in India reached 0.9 million units in last year's fourth quarter, up 14% from the year-ago period. Vendors cite increasing India's computer penetration as the challenge. Rural India, where 70% of the country's population lives, is still relatively untapped.

To tap such a market, **Encore Software** from Bangalore, India, under the guidance and financial support of the New Millennium Indian Technology Leadership Initiative Scheme has just launched Mobilis.

The Linux-based mobile desktop and two of its variants, the Mobilis Wireless and Sofcomp, an affordable and ultra-compact desktop are priced between \$222 and \$333, depending on the configuration. The products will be sold in India and abroad. All three products are targeted at unsophisticated computer users who want to run routine tasks.

Mobilis, sporting a 7.4 inch VGA LCD screen comes with a carry case that, while ingeniously hiding a full-size, flexible, roll-up keyboard when on the move, opens up as a desktop stand. Powered by Intel's X-Scale architecture based PXA255 processor it features an office suite, compatible with MSOffice, on-screen keyboard, flash storage and an optional GPRS modem or analog landline modem.

Mobilis Wireless additionally offers built-in GPS receiver and GPRS Wireless Modem options. Both devices offer integrated smart-card read/write capability as well. The third product, Sofcomp, is a very compact desktop designed for offices that don't really need the cost and bulk of today's GHz-speed PCs for their day-to-day work.

Although entry-level assembled PCs are available



for about \$400 in India, their TCO is far higher when factoring in uninterrupted power supply, maintenance and software costs, Vinay Deshpande, Chairman of Encore says.

"Lowering the computers' total ownership cost was the design's focus. We offer a battery backup for up to six hours, and an optional solar panel for recharging the battery. Poor power supply is a key problem in India, particularly in rural areas."

"Our products are not PCs, as the term PCs usually connotes the use of Windows and mainstream PC processors from Intel," clarifies Deshpande.

All three products have built-in local-language support, office suites, personal information manager, e-mail, Web browser, PC synchronisation as well as text-to-speech, at no extra cost.

Encore has also co-developed the Simputer, a \$200 Linux handheld computer. Although the product has not done well in the market, with sales of only about 5,000 units since its commercial launch last February, product demand is now increasing, says Deshpande.

Mobilis has already attracted three major clients viz. ITC (for health and education), Reva Electric Car Company (for its dashboards) and some South African Universities for their students.

Encore's not alone in the cheap PC initiative for developing economies. Intel for example, is reportedly designing a PC that will work on a car battery.

Other vendors are testing different low-cost computing models. Novatium Solutions, a startup

in Chennai in South India, is working on a Linux thin client that will sell for about \$100 and lack moving parts. The company believes that as broadband proliferates, the most viable option for low-cost computing in mass markets will be to hook a simple appliance on to a Linux server on a network. In addition to low prices, in emerging markets, manageability is also critical, says Novatium's spokesperson.

Novatium's thin client has been designed from the ground up, and includes a processor designed in-house by the company. Besides supporting traditional data processing, the thin clients will support multimedia applications such as streaming video. Novatium aims to deliver computing as an utility that is piped through networks into thin clients.

Via Technologies, a Taipei hardware vendor plans to introduce a range of low-cost computer designs aimed at users in emerging markets, including the Middle East.

The company's Terra PC project aims to bring to market three different devices, which will use Via processors and chipsets, says Ravi Pradhan, Country Manager of Via in India. To be priced between \$100 and \$250, and will be introduced first in India this September in partnership with other companies, such as ISPs.

Via's first line of products will run Linux to lower costs, although the company may consider offering products with Windows at a later date.

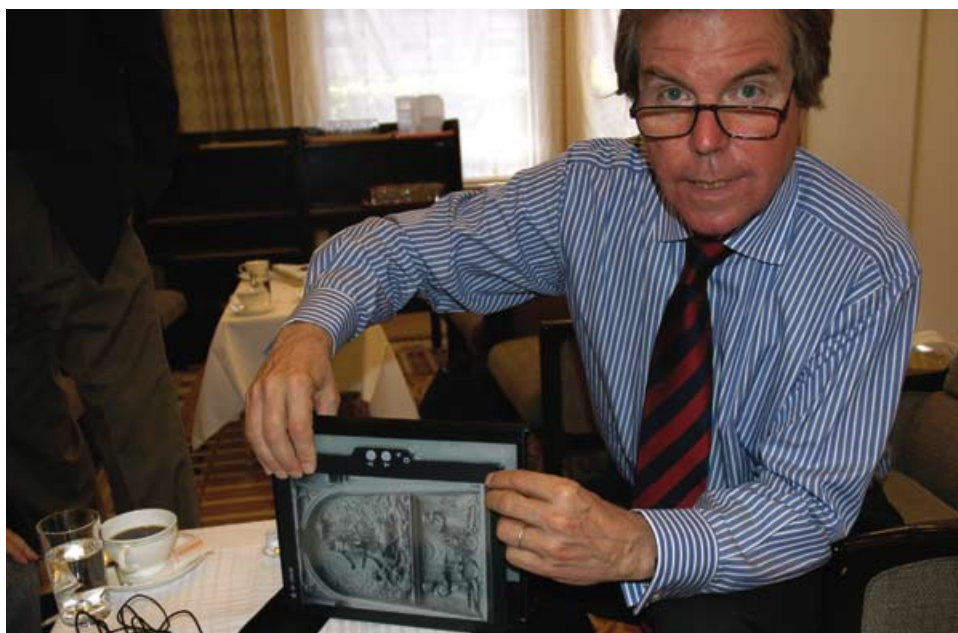
The Terra PC range includes a fully featured PC, priced at \$250, including a hard-disk drive and a monitor. It also includes a flash memory-based Media Station and a \$100 Communication Station, that uses flash memory and is designed for broadband Internet applications, such as VOIP (voice over Internet Protocol).

Indications are that the company will market the products under its brand name. Via is also negotiating with India-based companies to manufacture the products. Via will also offer lower-end products with flash memories. The products will include Linux-based software for manageability that Via developed.

In addition to the reference designs, Via is developing a series of product bundles consisting of Terra PC clients and a server, targeted at specific applications, such as schools or an Internet cafe, Brown said. The bundles are being developed as part of an effort to find new distribution channels to get the Terra PC devices to users who can best take advantage of them.

\$100 Linux laptops next year

The MIT Media Lab's project to develop and sell a \$100 Linux laptop is expected to see the first machines available in 2006.



➤ An ambitious plan by the Massachusetts Institute of Technology's (MIT) Media Lab to develop and distribute a laptop computer costing no more than \$100 is expected to take a major step forward next month with the receipt of the first order.

Orders from five or six countries, for a total of six million machines, are hoped for before a full pilot project can begin, says Nicholas Negroponte, Chairman of the MIT Media Lab. The basic aim of the project is to provide a laptop for every child, supplied through any country that wants to offer them.

Negroponte was in Japan recently to promote the project at the Tokyo Ubiquitous Network Conference, a sideline conference to the United Nations' World Summit on the Information Society, bringing together delegates from around 80 countries.

"Many countries lack the means or ability to realise the full potential of their children through their current education systems, he says. The combination of laptops to all children, broadband connections for the towns and villages those children live in and a school syllabus for the use of

digital materials, will improve not only the education each child receives but their future prospects as well," Negroponte envisions.

Advanced discussions with various governments for pilot projects are already well underway. China is expected to order three million machines and Brazil is expected to buy 1 million of the laptops. Negroponte is looking for three more nations – one each in Africa, the Middle East and South East Asia to commit to laptop orders, in addition to supplying some to the US, before the machine goes into production, hopefully sometime in 2006.

The standard sales model for laptop computers requires a lot of capital for distribution, promotion and profit, but Negroponte is convinced that with a simplified sales model and some reengineering of the device itself, the \$100 price point can be realised.

The machine won't be available in shops. The company, which has the working title of 'The \$100 Laptop Company', plans to sell laptops in-bulk, directly to government ministries and isn't looking to make a profit. About 50% of a current laptop price is contributed by marketing, sales, distribution channel costs and profit, so removing those aspects

will provide big cost savings, Negroponte says.

The remaining half of the laptop's cost is accounted for by the parts and manufacturing, and Negroponte is planning savings there too. Roughly two thirds of this cost is the display panel and associated backlight, but Negroponte's version of the machine will use a projection display system that costs a total of about \$30.

"The rest of the cost is there to support an absolutely obese, overweight and unreliable operating system. If you get rid of that and start with a thin, tiny operating system you can do an awful lot," Negroponte says.

The laptop will run Linux. At this stage, the distribution hasn't been decided upon yet but the project is in serious discussions with Red Hat and Beijing's Red Flag Software.

The first generation machine will be based on a 500MHz processor from AMD, one of the project's main backers, and will have 256MB memory, 1GB flash memory in place of a hard-disk drive and a wireless LAN connection. The machines will automatically connect with others, forming a mesh network to support communications and also Internet connection sharing and they'll run software including the Skype voice-over-IP application.

Plans are already advanced enough to include second and third generation machines, due in 2007 and 2008 respectively. A prototype of the third generation machine he demonstrated was a tablet form-factor based on a plastic-film display from E-Ink. That machine could also use an advanced printing technology to produce the circuit board further cutting down the price.

Current plans call for the first six million machines to be manufactured in China and then for regional manufacturing centers to be established. Brazil is also interested in building a plant to produce laptops for its market and those in South America, adds Negroponte.

Additional manufacturing will be needed if the project reaches its eventual goal: production of between 100 million and 200 million laptops per year. In comparison the total worldwide PC market in 2004 was 195 million, according to a recent report from IDC.

The project is being headed by Negroponte along with two other MIT faculty members: Joe Jacobson, who developed the E-Ink technology and Seymour Papert, an expert on child learning.

The project's home page is:
<http://laptop.media.mit.edu>

UK turns to Linux for defence

New Linux cluster to aid in nuclear simulation



Fabio Gallo, VP
of Linux Networkx
(EMEA)

➤ The Atomic Weapons Establishment (AWE), responsible for a key part of the United Kingdom's nuclear defense capability, has acquired an Evolocity visualisation cluster system from Linux Networkx. AWE is using the cluster as part of their ongoing research into new techniques for visualising data produced by their extensive computer simulation facilities.

The high performance computing installation will play a major role at AWE as the organisation is responsible for managing the entire life cycle of the United Kingdom's nuclear deterrent. Since the cessation of underground nuclear testing, AWE's stewardship of the United Kingdom's nuclear deterrent is dependent on the use of large-scale computer simulations, including the visualisation of scientific and engineering data.

Visualisation is an integral component of AWE's technical computing facilities, and is essential to the understanding of the massive amounts of data produced in simulations.

With the arrival of high-speed interconnect technologies, such as InfiniBand, 64-bit processors and PCI Express, Linux clusters can now be used to build scalable graphics engines to generate detailed visualisations.

"Visualisation and Linux Clusters have moved on in the last few years, and nowadays visualisation technologies have to address more performance requirements than before. This includes large memory, 64-bit addressing, low latency interconnect, Open Source and the most recent development -- a mature system

management environment," says David Ball, Group Leader, HPC platforms at AWE. "These were some of the leading factors behind AWE's choice of Linux Networkx."

AWE's Evolocity visualisation cluster consists of Intel EM64T processors, with each node providing 16 GB of storage. Each rendering node has a PCI Express interface to a Nvidia FX3400 high performance graphics card and contains visualisation packages such as Chromium, CEI Ensight, VTK and Paraview.

The visualisation cluster also includes cluster management tools from Linux Networkx, Clusterworx and Icebox, to provide total cluster management from one interface.

Linux Networkx's experience delivering landmark systems to many of the United States' national laboratories, such as Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL), coupled with excellent price performance, was one of the reasons for AWE's selection of Evolocity technology.

"We are delighted by AWE's choice of Linux Networkx as a partner to produce critical visualisations in a Linux cluster environment," adds Fabio Gallo, Vice President of Europe, Middle East and Africa (EMEA) operations for Linux Networkx. "We are committed to serving the needs of the most demanding production-oriented supercomputing centers, and are confident we can meet AWE's requirements for reliable, effective and easy-to-manage cluster computing systems."

With the arrival of high-speed interconnect technologies, such as InfiniBand, 64-bit processors and PCI Express, Linux clusters can now be used to build scalable graphics engines to generate detailed visualisations.

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All from the region's market leader

PARC takes a second look at Linux

Regional market research firm revamps its existing open source infrastructure to increase its return on investment



Neeraj Chabra, Software support Manager, PARC

➤ As market research firm, Pan Arab Research Centre (PARC) had its share of growing pains in an emerging market like the Middle East.

The member of Gallup International, which handles large-scale multi-market media and consumer marketing research for the Arab market, PARC's IT infrastructure wasn't scaling up to serve them. "We had an unstable system causing disruption to the network. Furthermore, we didn't have sufficient in-house resources to trouble shoot and maintain the aging system. Even the gateway virus filter was ineffective, so everyday we had virus issues, flood of spam.

The mail routing schema was also complicated. It was a tough time," explains Neeraj Chabra, PARC's Software support Manager.

With a total staff base of 325 full-time members excluding the pools of part-time field interviewers and supervisors, located across satellite offices in the Gulf, supporting staff was also an issue.

Unlike most companies, which choose to migrate to a stable platform, PARC was already using Linux. "We have been using Linux for over seven years. This old Linux solution was developed in-house by my former colleagues. It served us well, when they were working [with PARC] but after they left, we found it difficult to handle support, so we decided to get external

"For day to day maintenance, Linux has not been an issue it's all GUI based, needs one time configuration, we have never had any downtime issues So far, we haven't had a single issue technically or operation wise."

Neeraj Chabra

AN IT SECURITY AWARENESS CAMPAIGN BY SECURITY ADVISOR MIDDLE EAST MAGAZINE



SECURE WITH KNOWLEDGE

THINK SECURE. ACT SECURE. BE SECURE.

Sometimes it seems that the more we hear about security problems the less we do to take control of the problem ourselves. Yet the single most effective thing a company can do to counter the everyday or the unexpected security threat is to get individuals involved into a security mindset. That's why Security Advisor Middle East magazine has developed a security awareness campaign, to build a security conscious work force within the corporate community.

The goal

To build awareness in the eight key IT security topics below, that affect every organisation both at the individual and corporate level.

1. Viruses, spyware and malicious code protection
2. Internet security, including Web browsing
3. Access control and password security
4. Social engineering and the human element
5. E-mail and instant messaging security
6. Mobile communication security
7. Physical security
8. Data security and integrity

Activities

The security awareness campaign brings together experts from around the region and internationally to form a "panel of experts", offering advice and addressing key security issues of corporate participants of the campaign.

A weekly Web based quiz will provide the participants with feedback on the level of response and understanding of the select security topics.

To be a part of this campaign and build an information security mindset both internally and externally, contact CPI: **E-mail: alex@cpidubai.com Tel: +971 (04) 351 5316**

In association with





“The solution we proposed was based on open source to achieve the lowest total cost of ownership. For the servers, we decided to base it on a popular enterprise server for stability, security with local vendor support. We didn’t want to reuse or improve the code in an already buggy system.”

V.S Dileep, Director, Network Gulf Information Technology (NGIT)

support, and opt in for a packaged solution,” says Chabra.

The challenge for Chabra and his team was not migration, which is the case with most companies but to stabilise the existing Linux infrastructure, especially something as vital as file, print and e-mail services. High on the agenda was to ensure PARC’s 90 employees in the head office and 25 researchers in the branch offices have smooth access to all the network services.

Since, PARC’s IT team had limited Linux skill sets, the firm turned to Network Gulf Information Technology (NGIT) a Dubai-based open source solutions provider. V.S Dileep, its Director who also oversaw the project explains, the challenges they had to start with: “PARC was running on a very old customised Linux, which was falling apart. They had huge spam problems, and data issues. The new IT team was simply baby-sitting the servers, but it was very unstructured and undisciplined. As soon as the old team left PARC last year, they were left in the wild stranded with Linux.”

Dileep’s team analysed the existing system over the weekend, proposed a solution based on Red Hat Enterprise Linux 3.0 and other open

source components to be implemented on the existing hardware. “The solution we proposed was based on open source to achieve the lowest total cost of ownership. For the servers, we decided to base it on a popular enterprise server for stability, security with local vendor support. We didn’t want to reuse or improve the code in an already buggy system,” he says.

For the hardware, NGIT chose to use the existing gear – a locally assembled server, with dual Xeon processors, 2 GB memory, with some additional external storage.

NGIT used the standard Samba server for file services, which also manages the user and group based access controls. The client machines log into the Samba server and have drives mapped to them.

For e-mail, PARC uses Postfix based mail server. Mails are downloaded by Fetchmail and distributed locally. All the 3-4,000 e-mails that PARC receives and sends everyday are content scanned for virus and spam by ClamAV and SpamAssassin. For mobile employees who have poor bandwidth, PARC employees use SquirrelMail, a lightweight web client.

As such the 30-year old research firm’s backend is powered by Linux, but on the client side,

the environment is predominantly Windows 98 and ME with a less than five Windows XP machines. With the lifecycle of most of these Windows clients expiring, PARC has plans to upgrade them to Linux and use the existing hardware.

“For day to day maintenance, Linux has not been an issue it’s all GUI based, needs one time configuration, we have never had any downtime issues. So far, we haven’t had a single issue technically or operation wise.” At this stage, on the desktop Linux has some work to be done, but on the server side, we don’t see any issue in migrating even other areas,” exudes Chabra.

Technically PARC’s servers are in auto-pilot mode the past seven months, but Chabra doesn’t want to take any chances. The company has signed up NGIT for an annual service-level agreement and an annual maintenance contract.

Looking back, PARC believes it was a frugal deal with excellent benefits – less than a thousand dollars spent on the server license and hard disks; no new upgrades; no application licenses for security suites or mail servers; no security issues; no training of employees. Chabra says he’s ended up with more than he bargained for.

Birmingham bets on Linux

UK City Council is migrating to Open Source, 1,500 desktops to cut costs and save taxpayers' money.



➤ Birmingham City Council has launched one of the UK's most ambitious open-source trials to date, shifting 1,500 client computers and associated server infrastructure to Linux and other open-source software.

The year-long trial is designed to generate objective information on open source's benefits, according to the UK city's council. The Office of the Deputy Prime Minister (ODPM) via the e-Innovations program is funding the trial, which is part of a wider project called Open Source Academy.

The Academy, announced in April this year, is also setting up infrastructure such as a code repository, a database of open-source suppliers and an accreditation program for open-source skills, in order to make open source an easier option for local authorities. The Academy hopes open source will mean efficiency gains and cost savings, promote inter-operability and open

standards, avoid proprietary lock-in, reduce duplication of work amongst local authorities and extend hardware life.

Birmingham will be migrating 1,500 clients in its library service to open source software including the GNU/Linux operating system, and such application software as the OpenOffice office suite and the Firefox browser, although details are yet to be worked out. The PCs involved will include public-access terminals and office desktops in libraries around the city, as well as the library service's server-side infrastructure.

Unlike another well-known open source project under the auspices of the Academy -- Bristol City Council's migration of 5,000 desktops to StarOffice running on Windows -- the Birmingham project will be open source through and through. "This is really the rubber hitting the road," says Mark Taylor of the Open Source Consortium, an advocacy group

that has an advisory role with several of the Academy's projects. "Birmingham has the biggest metropolitan council in the UK and in Europe, and it is rolling out a complete production business system."

The council is currently putting together a usability study and will begin rolling out the systems later this year. The trial will be followed by an impartial evaluation, taking into account productivity and initial and ongoing costs such as training and hiring IT staff.

While a number of local authorities are already using open source -- usually on the server side -- the benefits have not been made clear enough, according to Taylor. One of the major deliverables of this is having an unbiased study saying, "Here's what we have done and here are the good and bad aspects of it," he says. "A lot of councils are using it internally, but there are just no objective case studies on production systems in the UK."

BACK TO THE GRASS ROOTS

The past decade Linux has made inroads into enterprises, SMBs and the government sector. However, its real value to the education sector – the very place where it was created – wasn't quantified. Things are changing. **Now more schools and colleges are turning to open source to reap the benefits.**

Hobby to industry

Back in 1991, University of Helsinki student Linus Torvalds created a rudimentary version of the Linux kernel. For his hobbyist project, Torvalds used code from Minix (a flavour of Unix), his programming skills, some help from his peers and used his University's computer facilities to create Linux.

Interestingly, the past decade Linux has made inroads into enterprises, SMBs and the government sector, but its real value to the education sector – the very place where it was created from – wasn't quantified.

To put things in perspective, the British Educational Communications and Technology Agency (Becta) surveyed 48 schools across the UK and reports that schools using free open source software (FOSS) incurred half the costs than those running proprietary software, and 20% less for secondary schools. Becta's 24-page report looked at three areas – technical infrastructure, administration and management, and curriculum software.

The traditional perception that open source software is harder to support was disproved by the report. FOSS was found to cut support costs by up to 60%. In other words, schools, colleges and Universities can save millions of dollars every year.

"This report indicates that open source software can provide a cost-effective and efficient solution in schools if effectively deployed," says Owen Lynch, CEO at Becta. "We believe that software used in schools should be of a high quality and adhere to open standards, enabling compatibility and interoperability between products."

The report, which does not explicitly name Microsoft, suggests that the best performing schools were those running dual-platform PCs. This gave the advantages of open source's cost reductions while guaranteeing interoperability with commercial software.

Licensing and litigation

A few colleges in the Middle East are not surprised with the survey results. Take for instance, Emirates College for Management &

Information Technology, an active user of Linux since last year.

The Dubai based college currently runs more than 50 Linux desktops, based on Suse and Red Hat, which connect to five Samba Servers with 500 plus user accounts.

"Windows licensing was proving to be too taxing and expensive. We bought a Linux distro for around \$80 – it came with all the servers, office suites, browsers and standard applications. We duplicated it and used without any restrictions. For similar usage of Windows, we would have had to spend thousands of dollars," explains Abdul Rehman, Manager - Department of Computing & Technology Services, Emirates College.

Before deploying Linux, Rehman and his three member IT team did the math. An academic license for Windows XP and Office2003 costs approximately \$115 per PC. Add to this anti-virus licenses, server costs, administration and support the numbers could skyrocket. As such, Microsoft provides volume licensing and academic discounts, but the numbers still add up to tens of thousands of dollars per year.

"Microsoft allows a single copy of Windows to be used on only one computer and in contrast, once you have purchased Linux, you can run it on any number of computers for no additional

charge. We can download open source software for free, duplicate it and use it the way we want," exudes Rehman.

Motivated by the results of using FOSS, Emirates College is now embedding Linux training directly into the curriculum and creating Linux certification tracks to help its college students. "There's a man power issue, so we are trying to create an internal knowledge pool, by first training our students and staff. This will help us internally and even the students when they enter the job market," says Rehman.

Emirates College is also using Moodle, a free course management system (CMS) designed to help educators create effective online learning communities. Currently, three courses are being offering under the college's e-learning programme.

Despite his unabashed endorsement for Linux, Rehman is retaining Windows terminals for the staff to maintain interoperability with the college's ERP solution.

Emirates College is one of hundreds turning to open source. The Arab Open University has been using Moodle actively in all six branches throughout Arab states since last year. Moodle.org, lists more than 50 educational institutions across the Middle East as registered users.



Abdul Rehman,
Manager - Department of
Computing & Technology
Services, Emirates College



Bashar Kilani, Manager of IBM Software Group Middle East and North Africa

Unlearning Linux

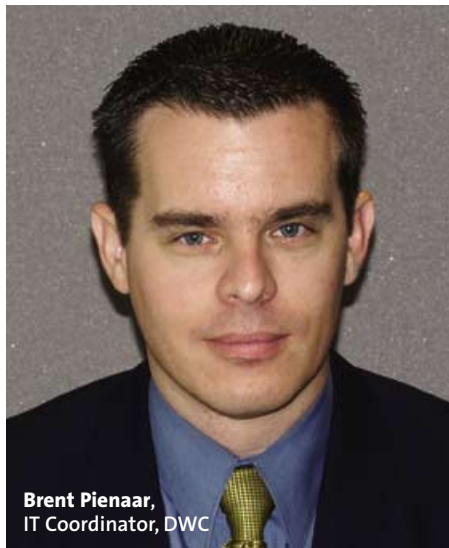
On the other end, the Dubai Women's College (DWC), part of the Higher College of Technology in UAE has taken a more conservative approach to Linux. DWC currently uses Linux for a few network services, besides a 15-node open source lab donated by IBM for the software engineering students.

The Linux usage looks dismal, considering DWC's current student base of 2150 students, expected to grow to 2700 by the next academic year. "We want to use something that's relevant to the market place...and so far we haven't seen any strong drive for Linux to train our students or use it," says DWC's IT Coordinator Brent Pienaar.

Unlike smaller institutions such as Emirates College, where licensing costs is an issue, DWC sees no reason to follow suit.

Furthermore, Pienaar is wary of support issues. "Sure, there might be a cost savings in licensing by using Linux, but we negotiate for 12 to 15,000 academic licenses with vendors centrally, for all the HCT colleges," concedes Pienaar. "The support issue is more important to us. We don't have a huge IT team, so we need to keep support costs low or minimal. There's not much Linux knowledge out there for us to be assured of getting good support."

A couple of years ago, Pienaar's concern may hold water, but things are changing now. Traditionally, IT vendors have had closed ties with Universities for seeking the best young talent, research projects and helping them through corporate grants. IT companies are now extending that relationship to include open source.



Brent Pienaar, IT Coordinator, DWC

Vendors go to school

For example, IBM is working with Red Hat to bring universities up to speed in teaching college students open source skills. According to IBM's research of technology training at universities around the world have shown a need for more open-standards offerings. About 75% of a group of CEOs interviewed by Big Blue's Business Consulting Services said education and a lack of qualified candidates are the two issues with the greatest impact on their business.

In the region too, IBM and Integrated Technology Group (ITG), a Jordanian software vendor have ported ITG's EduWave e-learning platform to run on the Linux operating system.

"EduWave is a great product that has the potential to revolutionise learning and learning management in the Middle East. We are supporting EduWave as part of our e-learning offering, we will be able to offer the system to the regional governments who are now demanding a Linux based alternative," says Bashar Kilani, Manager of IBM Software Group Middle East and North Africa.

The new version of EduWave will enable educational authorities to specify and deploy open standards-based national e-learning initiatives, using Linux rather than being 'locked in' to proprietary software environments.

IBM's and ITG's efforts seem to be paying off. The joint effort aims to provide comprehensive K-12 and higher education e-learning platform for over 3,000 Jordanian schools. The vendors are also currently deploying the Linux based e-learning platform for Bahrain's Ministry of Education serving around a quarter of a million users.

Similarly, Novell has launched a new introductory Linux training course designed for academic environments that gives educational institutions new tools to promote open source training. The course covers the objectives by CompTIA for its Linux+ exam and certification, an international industry credential that offers proof of knowledge in key Linux areas, from networking configuration to directories to the Linux desktop.

Even Independent software vendors (ISV) who usually focus on creating software based on commercial demands are now getting involved. Thanks to efforts like School Forge, and developer communities such as Fresh Meat.net, educational bodies can pick and choose from a veritable list of more than 600 applications, tailor-made for the learning sector. These applications cover everything from courseware, administration, e-learning, computer based training (CBT) and other standard packages.

Educational enterprise

Software providers such as SunGard SCT are now trying to get the academia involved. The vendor has started by off by porting its software to Linux and getting its 1,300 higher education institute clients worldwide to work with them closely to improve the code and share the benefits.

SunGard SCT, says despite the increased vendor involvement, the issue boils down to the nature of running an educational institution. "A lot of universities do not look at IT costs, in the same way an enterprise does, since making profits, competition, reporting to shareholders etc isn't high on the agenda. Actually, open

"A lot of universities do not look at IT costs, in the same way an enterprise does, since making profits, competition, reporting to shareholders etc isn't high on the agenda."

South Korea pushes forward with Linux for schools

source and open standards should be of great interest to the academia, because many of these initiatives started out from universities," says Mathew Boice, General Manager, SunGard, SCT EMEA.

The efforts are not coming from vendors alone. Even Linux user groups (LUGs) are pitching in to get more schools and colleges involved. "We want to get the younger generation involved in open source actively. They should have the freedom to work in any platform, than be forced to use only Windows in their schools. Open source technology gives them ample freedom," says John Joseph, Coordinator for one of Dubai's LUGs.

The self-funded group is distributing 5000 FOSS CDs to college students across the UAE and working close with the region's various higher colleges of technology (HCT) to involve the faculty and students.

At this point in time, both vendors and academia who are embracing FOSS are seeing the benefits. "Opening up our software and getting the academia and open source community involved, is helping us generate more business. We are trying to establish academic administrative standards so Universities can operate with the same efficiency as any other enterprise," adds Boice.

**Mathew Boice, GM,
SunGard, SCT EMEA**



> The South Korean government is moving forward with a program to roll out servers running the Linux operating system that will handle student data for 10,000 of the nation's schools by 2006, according to the Korea IT Industry Promotion Agency (KIPA).

Under a program that was started last October, Linux servers have so far been deployed to handle student data for 132 schools in Seoul, the nation's capital, according to Yang Sungha, vice president of KIPA's Open Source Software Promotion Center, a nonprofit government-backed agency based in Seoul.

The program, which will replace Unix servers handling students' academic and medical records with a local distribution of Linux called Booyo, was started by South Korea's Ministry of Education and Human Resources Development to cut IT costs. The project, which is called the National Education Information System (NEIS), will ultimately involve the installation of 2,288 servers to handle student records for 10,000 schools, Yang said.

The project's cost was not disclosed.

Booyo was introduced last year and was developed by the Electronics and Telecommunications Research Institute, a government laboratory, and seven South Korean software companies, including Linux software vendor Haansoft, Yang said.

A growing number of government and government-affiliated organisations in South Korea are using Linux, but overall the operating system still has a small share of the market compared to Unix and Microsoft's Windows operating system, according to KIPA.

Major Linux users in South Korea include the National Institute of Agricultural Biotechnology, where Linux accounts for 95% of the institute's servers, and the Korea Center for Disease Control and Prevention, where Linux is used on more than half of the center's servers, according to figures provided by Yang.

By 2007, KIPA hopes to see Linux used on 30% of servers operated by central and local government in South Korea, he said. By 2010, the agency wants to range this to rise to 40%, he said.

At present, Linux is used on 6% of the South Korean government's servers, Yang said.



OPEN SOURCE TOOL KIT:

<http://www.becta.org.uk/>
<http://www.schoolforge.net/>
<http://moodle.org/>
<http://www.uportal.org/>

<http://www.freshmeat.net>
<http://edu.kde.org/>
<http://k12linux.org/>

OPEN TALK

Interview with Eva Beck, HP

Leaping ahead with Linux



➤ As the Linux Business Manager for HP's Technology Solutions Group (TSG) in Europe, Middle East and Africa, Eva Beck's key role is to drive HP's strategy and marketing. Eva has been performing this role for the last two and a half years, having joined HP in 2001 as the Programme Manager for Microsoft DataCenter and Intel Alliance Manager. Following is the transcript of a telephonic interview with LWMEA:

YOU COVER A LARGE MARKET LIKE THE EMEA. BUT MOST OF THE LINUX ACTION SEEMS TO BE HAPPENING IN EUROPE, MORE SO GERMANY, UK AND THE US THAN FROM THE MIDDLE EAST.

Actually, we are seeing quite some interest from this region. We did a Linux road show for the Middle East recently and there were some 260 attendees. If you look at the market size, in proportion, that's a lot of interest. That's a good proof point for us [HP] at how important Linux and open source is in general. More and more companies are now eager to get into Linux.

In the past two years, Linux has really taken off even in the Gulf. That's excellent news for us. Some customers are a bit hesitant to take the first step, they prefer waiting for others to take the risk. On a worldwide level, there is a wide level of acceptance. Three years ago, people thought only geeks with pony tails wanted Linux. Two years the Linux argument moved to TCO and ROI. Now Linux is given and enterprises are taking it for granted.

IN TERMS OF PERCENTAGE HOW MUCH OF HP'S GLOBAL LINUX REVENUES COME FROM THE EMEA MARKET?

About 40 to 45%, it's a pretty substantial number. You have to split those percentages however. If you look at the server market, then it's around 42%. If you look at the client and workstations side, then the picture is different. In that case, the numbers are bigger. There are more Linux desktops and thin clients in Europe than in North America. Here are the adoptions rates are faster.

CAN YOU DRILL DOWN THE NUMBERS FURTHER FOR THE MIDDLE EAST MARKET?

Unfortunately, we can't. We track the EMEA market as a whole.

WHAT DO IT MANAGERS AND CIOs HAVE A BIG ISSUE WHEN IT COMES TO LINUX?

ARE ISSUES LIKE SECURITY, MIGRATION, COSTS STILL ON THEIR CONCERN LIST?

Their biggest issue is still support. Customers want one throat to choke; they want to call up one supplier, one number for support. They don't want to call ten different vendors for support. That's something we have incorporated in our Linux strategy. We want to be the interface for the customer everything from the hardware, middleware to the applications.

DOES HP HAVE LOCAL SUPPORT CENTRES IN THE MIDDLE EAST? MOST CUSTOMERS HERE STILL HAVE TO DEAL WITH EUROPEAN OR US TECH SUPPORT?

Yes, we offer support directly and through our partners.

DO YOU HAVE ANY NEW PRODUCT LINES OR LINUX INITIATIVES?

We invested heavily into notebooks. In the past you could run Linux on the laptop, but it was painful and troublesome. Drivers, wireless support were issues. So we preinstalled Ubuntu Linux on our notebook line and its Linux enabled. Customers can now easily install it and it comes ready with all the functions they need. We wanted to test the market, so we are shipping these devices. There's lot of interest from financial customers in Italy, who want to migrate their desktops to Linux. We are seeing this in government organisations also.

HOW HAS THE RESPONSE TO THE NOTEBOOKS BEEN?

We have a preloaded our notebooks with DOS. Customers can buy the software either from the reseller or download it for free. We expect to see tremendous response from the market, with this notebook line. That's the feedback we got so far. In six month time, when we talk again, you can get concrete numbers. HP is the only number, with a large Linux hardware portfolio.

“Three years ago, people thought only geeks with pony tails wanted Linux. Two years ago, the Linux argument moved to TCO and ROI. Now Linux is given and enterprises are taking it for granted.”

But isn't that whole issue with Linux and Windows? OEMs bundle the OS and include the cost, so customers don't need buy or install anything. Because it comes with it, people end up using it and rarely see the need to migrate to Linux. So why should they make the extra effort, if they have already paid for it.

People who really want to use Linux will make the effort. I talk to lot of customers and they say it's an excellent thing. Earlier, they would spend extra time trying to configure their Linux notebooks, now they don't need to. It's already preconfigured.

WHAT OTHER INVESTMENTS IS HP MAKING TO PUSH LINUX SHIPMENTS?

That's the client side. On the server side, we have Big Tux, a project to help scale Linux to 64-way on a standard Linux kernel. We recently opened a \$3m open source utility performance center in France to prototype and deploying complex IT solutions. The feedback from the media was exciting. We are making other investments so customers can get buy and get support for everything to do with open source.

How about desktops?

We have workstations, which come bundled with Red Hat Linux since a few years. In the past we shipped with Mandrake. Moving forward, customers will have Suse Linux desktops. That's already in place.

IBM AND HP SEEM TO HAVE THEIR HORNS LOCKED ON LINUX. BOTH OF YOU ARE BIG LINUX CHAMPIONS; YOU SHIP LOT OF WINDOWS MACHINES, SELL YOUR OWN PROPRIETARY LINUX AND MAINFRAMES. SO WHAT SORT OF CUSTOMER MIGRATION PATTERNS DO YOU SEE?

Most of the customers are coming from the Unix world. Sun has seen their business fade from edge of the network servers. We see lot of customers there coming to Linux on x86 servers. With Windows it's a bit tricky because if companies have lot of personnel in Windows they have put quite some effort into training them on Linux. Its possible, but a little challenging.

WHICH ARE THE BIG CUSTOMER WINS HP HAS HAD RECENTLY?

Continental Airlines, University of Oslo, ADMA Opco, a few stock exchanges, Police of lower Saxony and others.

WHAT ABOUT MARKET SHARE? ALL THE VENDORS SEEM TO MAKE BIG CLAIMS ABOUT THEIR LEADERSHIP IN LINUX?

That's something we are really proud of. Everyone says IBM is leading in Linux, but if you look at the true numbers we have a total server revenue share of 38% in EMEA. For us, that's the best proof point that customers what like HP offers.

But these server shipment numbers change every quarter from research firm. It depends on what metrics you use, what markets you are considering and who you talk to, there are so many factors you are involved.

This numbers considers the total server revenue. This number has been stable since 28 quarters, and most of the time IBM has around 20 to 22% market share. So it's a kind of indication that we are an integral part of the market.

DO YOU HAVE ANY TARGETS FOR THIS YEAR?

The market is growing heavily, so we would like to maintain the market share. We also want to deliver complete solutions.

Red Hat's CEO talks shop and apps



➤ If anyone can be called an evangelist of the commercial value of open source software, it's Matthew Szulik, CEO of Red Hat. He has guided the company to profitability as other Linux startups have gone down in flames around him, all the while managing the difficult task of succeeding in both the open source software community and the enterprise data center.

Today, Red Hat is unique. After all, where else would you see the chief executive of a 1,000-employee company take to the stage during a keynote address and belt one out with a local gospel choir, as Szulik did at his company's recent Red Hat Summit 2005 in New Orleans. And that unique blend of open source credibility

and enterprise marketability has become the standard for a whole new generation of open source companies, including JBoss, MySQL and SpikeSource : a successful business built on free software.

Linux World MEA sat down with Szulik in New Orleans to ask him about Unix, Microsoft and whether he's thinking of buying one of those up-and-coming open source suppliers.

LWMEA: SUN HAD BEEN HINTING FOR A WHILE THAT IT WAS WORKING ON A MAJOR ACQUISITION, AND AT ONE POINT EVEN SUGGESTED THAT THEY MIGHT CONSIDER PURCHASING NOVELL. DID YOU BREATHE A SIGH

OF RELIEF THIS WEEK WHEN YOU FOUND OUT THEY [SUN MICROSYSTEMS] WERE PURCHASING STORAGE TEK FOR \$4.1 B?

MATTHEW SZULIK: No. I've come to the conclusion that when people make big forecasts about big acquisitions, they usually become underwhelming.

WHAT ABOUT THE ISSUE OF CONSOLIDATION? THIS IS HAPPENING SO MUCH IN THE SOFTWARE INDUSTRY RIGHT NOW. IS THAT GOING TO HAPPEN WITH THE LINUX INDUSTRY AS WELL?

I don't think so.

YOU DON'T THINK YOU OR NOVELL ARE GOING TO GET PICKED UP BY A LARGER COMPANY?

Well, I couldn't speculate on that, but I don't think the industry of open source is at a point of maturity. I don't think the economic models are exhausted, as, in my view; they are in the proprietary software business. So I have a hard time reconciling the economies of scale that that would create.

I had a chance to speak at Harvard a month ago, and I met 20 CIOs who manage IT budgets of \$500m or larger. So these were very, very serious IT executives. And many of them had small deployments; nothing strategic. My take-away from that was, "Holy mackerel! This is still a market at a very early stage."

So if you believe that, what would we consolidate besides pretty robust technical talent? Now, when you look at our last two acquisitions, we consider those to be highly strategic. One was in the area of file systems, which of course is incredibly important. And the Netscape [directory server] asset was an asset that we had been tracking for four years. We had been paying attention to that asset because of the lack of domain experience in building directories [and] the strategic importance of being able to deliver advanced levels of security, certificate management. This is highly strategic for our company.

And then you look at what's happening as you get databases and application servers. Is that really a compelling business for Red Hat to think through? That's not clear to me right now, and I don't hear our customers asking for it, quite frankly.

SO WHERE DO YOU SEE RED HAT GETTING TRACTION BEYOND BEING AN OPERATING SYSTEM PROVIDER?

In 2004 there were \$19b, globally, in Unix systems sold. So when people say, "Are you going to grow past an OS company?" I say, "Don't get bored with this Unix-to-Linux migration. It's still in its infancy."

We want to continue to be pragmatic and not be overzealous and give into the siren call of Wall Street: "Go buy company X," or "Go buy company Y." And then we have an enormous integration problem: Witness our competitor. You miss out on the speed with which the industry is moving while you're trying to integrate a disparate culture, a disparate set of people that may not have the same motivations as you.

WHO DO YOU WORRY MOST ABOUT AS A COMPETITOR RIGHT NOW?

Microsoft.

WHY MICROSOFT? YOU WERE JUST TALKING ABOUT UNIX-TO-LINUX MIGRATION.

I think it's economic models, and which economic model and which development model will win. As you have seen other large economic changes in this industry, it really goes to economic models, business strategies and people.

When I look at the Unix competitors, HP seems to be de-emphasizing their Unix business. We continue to take share away from Solaris. I think the next deepest competitor that has always proved a roadblock is Microsoft.

RED HAT'S CRITICS HAVE CHARGED THAT OPEN SOURCE REDUCES THE AMOUNT OF MONEY THAT CAN BE MADE BY IT VENDORS. HOW DO YOU RESPOND TO THAT?

Did Microsoft take money out of the IT industry when we moved from mainframe computers? No. I think Sun Microsystems and Microsoft and other entrepreneurs at that time [in the early 80s] took enormous personal risk and created great companies recognizing that sea change.

WHAT HOPE IS THERE THAT CUSTOMERS WILL GO TO A FULL OPEN-SOURCE SOFTWARE STACK WHEN THEY ALREADY HAVE EXISTING PRODUCTS FOR THINGS SUCH AS DIRECTORY SERVICES AND IDENTITY MANAGEMENT?

That's true. But I think you have to look at the globe. First of all, where do we see the fastest take-up and adoption of our

"When I look at the Unix competitors, HP seems to be de-emphasising their Unix business. We continue to take share away from Solaris. I think the next deepest competitor that has always proved a roadblock is Microsoft."

desktop technology? It's in Europe and Asia. Organizations that have or are already in the process of moving their legacy systems forward -- or are looking at and building net new environments -- either they're leasing or [their] existing architectures are just stagnant. They now have the benefit of Linux and open-source technologies, and they're asking for things that are new and different.

HOW DO YOU EXPECT TO GET USERS TO MOVE OFF MICROSOFT'S ACTIVE DIRECTORY?

You raise a good point. Maybe within the next 12, 18, 36 months, Active Directory in the US won't be the place where the directory's capability is, [where] the certificate management capability happens. Maybe it will happen in Spain. Or maybe it will happen in England. Or maybe it will happen in Poland or Russia. There were US\$19.5b of Linux-related technologies sold in 2004. This is an incredibly large market which we're competing in, and Red Hat's business opportunity is really at such an embryonic stage. To me, it's no longer a question of if. It's just a matter of when.

DO YOU CONSIDER YOUR GREATEST OPPORTUNITY TO BE ABROAD, WHERE COMPANIES MIGHT HAVE LESS-MATURE INFRASTRUCTURE THAN US COMPANIES DO?

Definitely. And I think you see a different set of behaviour happening in those markets. There is not the bias toward an indigenous U.S. supplier. There is a technically educated work force in certain markets that has now grown up with Linux and open-source, like in Germany, that has the literacy and the capacity and the desire to

change. You're starting to see markets in India come to the fore, systems in China, Brazil.

WILL IT BE WORTH THE RESOURCE EXPENSE FOR RED HAT TO ENTER THE DIRECTORY MARKET?

First of all, it already has a rich customer base. ... And to build up this open-source architecture, we had an absolute dependency on providing an open-source directory to deliver authentication, improved capabilities around identity management, [and] ultimately the ability to manage the hundreds of thousands of devices that will somehow be connected to someone's infrastructure for remote management and single sign-on. If we didn't do that, then what are we going to do?

WHAT MARKETS DO YOU THINK YOU MIGHT GET INTO AFTER THIS?

We want to look at where software can continue to be delivered as a service -- to deliver value around those areas, as opposed to taking on the economics of a work force. ... The classical software packaged product is only going to decline in value.

WILL YOU EVER GET INTO THE APPLICATION BUSINESS?

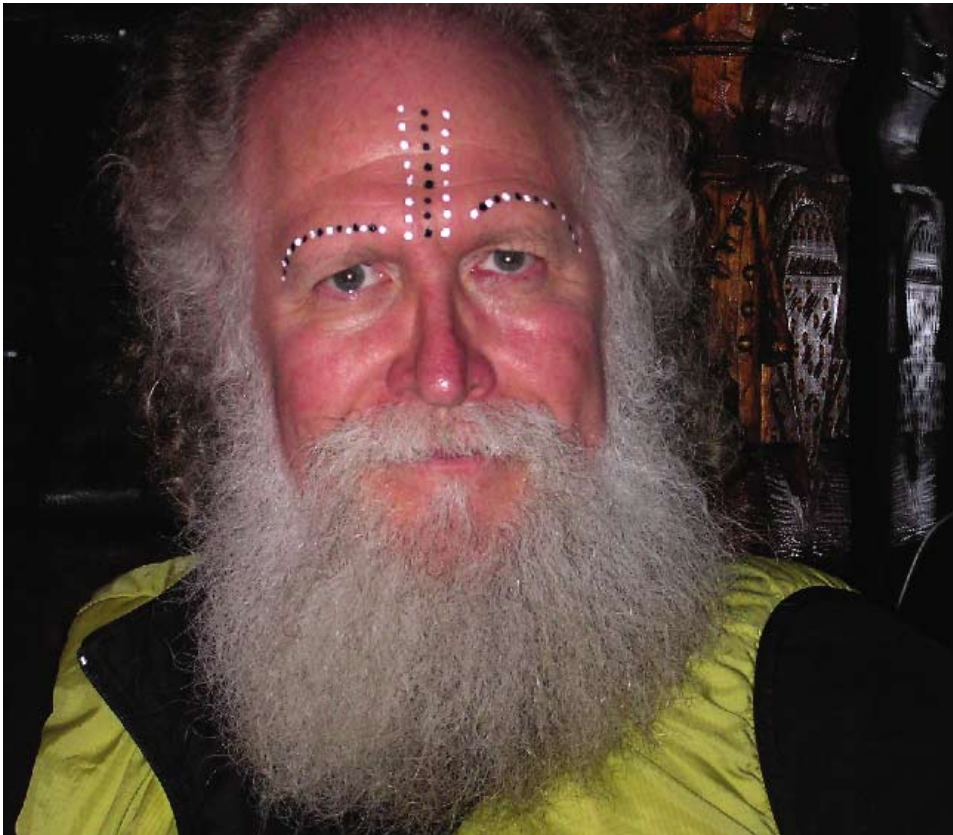
I don't think the application business is ever going to look the way that it's looked the last 25 years.

HOW DO YOU THINK IT WILL CHANGE?

We're doing software as a service. ... I think it will change our relationship to applications. Component-based development because of open-source software is increasingly going to become a reality. I think there will be a different problem to solve.

Linux guru shares his open source views

In the run-up to the first LinuxWorld South Africa conference and exhibition, where executive director of Linux International, and Linux guru Jon “Maddog” Hall is a keynote speaker, Linux World MEA caught up with ‘Maddog’ to get his take on the Linux universe, today and in the future.



LWMEA: WHY DO YOU THINK LINUX IS SUCH HOT NEWS, AND CAUSING SUCH A STIR IN THE WORLDWIDE MARKET?

HALL: Control. People want control over their business. When a program needs a bug fix or extension, and people cannot get it from the proprietary vendor because the vendor does not have the engineering time to provide it, people become frustrated.

With free and open source software (FOSS), the customer can choose to hire someone other

than the company that wrote the software to make that fix, or extend the program to meet their needs. The same thing is true for software that is being retired by a company, or software that came from a company that went out of business. FOSS allows you to maintain that software yourself (or hire someone to maintain it) until you are ready to retire it.

If you are creating an embedded device and want to use FOSS, you do not have to ask anyone's permission, negotiate any royalties or

engage any lawyers. All you have to do is obey the licence requirements. You have control over your design.

WITHOUT CLEAR OWNERSHIP BY ANY ONE PARTY, DO YOU THINK IT CAN POSE A STRONG THREAT TO PROPRIETARY OPERATING SYSTEMS ON THE MARKET?

It is actually the fact that no one 'owns' FOSS (or everyone owns it, depending on your view) that gives FOSS its strength. No one can say 'you cannot use it'. There are no embargoes by some large country, and no rapid increase of fees, even if you use a 'commercial' version of Linux, since you can just go to another distribution, maintaining your investment in applications hardware and training.

Where do you go for Microsoft-compatible software when Microsoft decides to change its licensing practices or the cost of its software? Actually, I think I know where intelligent people will go...

WHAT IS YOUR OPINION ON THE CAMPAIGNS THAT PROPRIETARY SOFTWARE VENDORS HAVE LAUNCHED, FOCUSING ON LINUX HAVING A LOWER TCO THAN THEIR PROPRIETARY OFFERINGS?

These battles go back and forth, with each side claiming victory. It is actually irrelevant. The real issue is not TCO, it is Return On Investment (ROI). If I buy a \$600 software package, and I cannot use it because it does not meet my needs, I am out \$600 because I have no way to make the software meet my needs. On the other hand, if I buy a different software package for \$700, and that software package meets my needs exactly, saving my company \$1m, then I do not care that the second package costs more.

The ability of FOSS to be tailored to a company's needs due to having the source code available and modifiable might make the FOSS software much more valuable in the long run than software that you cannot modify.

WHAT ARE SOME OF THE BENEFITS THAT MASS ADOPTION OF LINUX AND OPEN SOURCE SOFTWARE CAN BRING TO EMERGING COUNTRIES? CAN IT PLAY A VALUABLE ROLE IN BRIDGING THE DIGITAL DIVIDE?

It can be more valuable on many fronts. First of all, FOSS can be changed to support the many

languages and dialects of Africa. Why should everyone have to learn to speak English?

Secondly, it helps the balance of trade. Why should the country be sending millions of dollars a year outside its boundaries? Shouldn't you be using that money to employ SA programmers, who eat local food, live in local housing and pay local taxes? And why should local customers have to pay heavy import taxes on foreign software?

Most developing countries cannot afford to pay US programmers the money necessary for tailoring software created in the USA. However, they could afford to pay local programmers to tailor software in their own economic base.

We hear about a lot of software piracy these days, and developing countries typically have more than their share. Some of these people say: "Why should I use FOSS software? I get all of my software for free or very little money."

The problem is three-fold: The World Trade Organization is cracking down on software piracy, making it difficult for these countries to keep pirating software; pirated software gives you no control. You cannot get bug fixes for pirated software, or needed enhancements, or training, or other services that require you to show where you obtained the software; and you also send a very bad message to the youth of your country.

Using FOSS software allows you to pull it down free of charge, and use it as you wish, changing it to meet your needs.

WHAT IS THE SINGLE MOST COMPELLING RATIONALE FOR MASS ADOPTION OF LINUX ON THE DESKTOP IN THE CORPORATE ENVIRONMENT, TAKING INTO ACCOUNT THE HIGH NUMBER OF MICROSOFT-FAMILIAR COMPUTER USERS IN THE WORLD TODAY, AND THEIR RELATIVE RESISTANCE TO CHANGE?

New projects. I do not overly encourage people to take already existing projects in the workplace and convert them from Microsoft to FOSS. At best this might be called 'the all pain, no gain' port. Even if everything goes fine, you still may have people who do not benefit from the change, and all they experience is the porting process.

On the other hand, new projects mean that the people have not been trained yet, have not created a lot of data that might have to be

transformed. Everything is new. And you can tell them that Linux and OpenOffice is just a preliminary copy of Longhorn.

Speaking of Longhorn, this might be the perfect time to switch over to Linux. After all, for most Microsoft users, THAT will be the 'all pain, no gain' port.

On the other hand, there may be things that Linux can do that Microsoft cannot do today. As an example, Linux has been 64-bit since 1995. Microsoft will not be 64-bit until Longhorn, due out in 2006 (or maybe 2007 or 2008).

WHAT WILL IT TAKE TO PUT THE SUPPORT MEASURES IN PLACE REQUIRED TO EASE CORPORATE MIGRATION TO LINUX?

A well-trained and intelligent systems administrator/VAR or reseller. One who can tailor a package to exactly what the desktop user needs, and then place it in front of them.

This is particularly true of any type of data entry projects, where the main function of the desktop is not to read e-mail, edit documents or create presentations, but simply to utilise a browser to fill in forms and enter and retrieve data from a database. Why should someone pay a lot of money for that desktop?

IT HAS OFTEN BEEN SAID THAT LINUX MIGRATION IS NOT A TECHNOLOGY ISSUE, BUT RATHER A BUSINESS ISSUE, TAKING INTO ACCOUNT DELIVERY ON BUSINESS DRIVERS AND THE CHANGE MANAGEMENT TASKS THAT ARE REQUIRED. WHAT ADVICE WOULD YOU GIVE A COMPANY EMBARKING ON A MIGRATION STRATEGY?

As I said, look for a new project that can be set up from the beginning with FOSS. Then there will be no 'migration.'

Also, you can use Linux systems in places where you know it will work and the end-users do not even know it is there. For example: firewalls; DNS servers; file and print servers; database servers. This will give your systems administrators and managers time to get used to the system and its administrations.

HOW CAN CORPORATES, IN THE SPIRIT OF OPEN SOURCE, GIVE BACK AS MUCH AS THEY GAIN FROM LINUX?

By understanding that most corporations have

a 'core competency', the thing that they actually sell or make their money with. Everything else is 'support', and really not why the customer pays their money. So, if companies develop a 'FOSS' policy for ancillary software (or even business practices), they may find that they can reduce the cost of doing business overall so much that they can lower the costs to their customers, and expand their market.

A friend of mine is a systems administrator for a large company. He HAS to write code that helps him do his job, but he does not have time to write all the code he needs. So, at night he goes home and sits on the couch beside his wife and writes code on his laptop while she watches TV. (Not to be chauvinistic, there are lots of female systems administrators who do the same thing while their spouse watches TV). At the end of the night he contributes his code to a FOSS project that he has joined. The next day he goes into work, and finds out that overnight 10 000 other systems administrators have been doing the same thing, and there is much more code out on the Web that helps him do his job. His statement to me is: "Maddog, I give so little and get back so much." FOSS is an amplification system....it amplifies what a single person can do.

Instead of companies putting roadblocks in the way of this happening, they should be rewarding the employees that do this type of thing. Certainly publicly funded institutions and governments should be encouraging this type of behavior. Procedures should be put together to help software programmers and system administrators re-distribute code that they had to write anyway, or that they feel others could use.

Finally, FOSS projects should be documented, and written about. Case studies showing cost savings and ROI increases using FOSS will help convince other companies and countries that FOSS is the way to go. I have a friend who has a small company that produces system software. The bulk of his product is not sellable, although it has minor value for people in small companies.

On the other hand, there are a few modules that run on top of this system that are very valuable to large enterprises. It is the latter software that he sells to these large enterprises, and the former software is maintained by the FOSS community. If he had to do both, he would not be profitable.

PRODUCT SEGMENT



Nokia unveils Linux-based Web device without phone

The Nokia 770 is a pocket-size Web browser for wireless broadband networks

➤ Nokia has unveiled a pocket-size web browser for wireless broadband networks. This is the Finnish firm's first Linux-based device and it's also the first product without a built-in mobile phone.

The new device, dubbed the Nokia 770, has a 4-in. horizontal touch screen that can display normal Internet pages and will sell for \$350, the mobile phone maker said.

The product marks a significant strategy expansion for Nokia, which is venturing outside its mainstay cellular phone business. Nokia aims to sell the device through broadband home Internet providers and directly to consumers via its Web site.

"We're launching a completely new product category," said Janne Jormalainen, Nokia's VP for convergence products in its multimedia devices division.

The device is consumer device is targeted for home use that can be used at wireless hot spots.

The product will run entirely on open-source software, used in desktop computers, marking more uncharted waters for Nokia. "Using standard desktop Linux means innovation is happening faster [than in Linux versions for small devices]. We will be very fast in implementing this innovation," Jormalainen said.

The pipeline include upgrades by early next year to enable voice-over-IP calls and instant messaging.

VoIP phone calls from the device may cannibalise cell phone voice revenue from Nokia's main customers, which include all of the world's biggest mobile operators.

Nokia also plans to launch and support an open-source community Web site, encouraging software developers to hack into the device and improve the product.

Nokia aims to be competitive by implementing innovations ahead of competitors while benefiting from its huge scale -- it makes one of every three mobile phones sold in the world. The total mobile phone market is expected to be well over 700 million units in 2005.

Consumers will be able to store content downloaded from the Internet on removable MMC memory cards, or transfer it to a desktop computer with a USB connection or Bluetooth.

This new device, which took Nokia two years to develop, is a stab at the market for portable computers.

Last year, 189 million PCs were sold worldwide. By 2008, market researchers expect that more than half of all sales will be portable computers rather than desktops.

HP to offer customised Linux for notebooks in Europe

➤ HP offers its notebook customers in Europe the Ubuntu distribution is specifically designed to support the hardware used in HP notebooks.

Corporations and individuals can use the service to choose Windows, Linux or HP UX 11i as the OS for their new device.

Recently, HP EMEA expanded its activities and reacted to growing criticism that a generic Linux distribution often does not offer sufficient support for the hardware included in a notebook. One of the smaller Linux distribution providers, to offer its customers Linux that is 100% compatible with the hardware.

HP does not open advertise the Ubuntu option, but instead lists FreeDOS as optional pre-installed OS. If requested, HP will provide a CD-ROM with a customized and Debian-based Ubuntu Linux free of charge. The CD also includes free support as well as paid support through Canonical, the developer of Ubuntu.

According to HP in Europe, the Ubuntu Linux project is currently limited to EMEA - a region that tends to be more receptive to Linux than for example the US - and aims to demonstrate that a Linux desktop can be easily transferred to a notebook.

New McAfee LinuxShield

➤ McAfee is shipping new versions of McAfee LinuxShield and NetShield antivirus products.

"As more and more malware is created to run on multiple platforms, it is important for customers to know they can turn to a single vendor for complete, multi-platform protection," said Steve Crutchfield, Director of Product Marketing at McAfee.

The new functionality includes antivirus protection for the latest version of SUSE Linux and Novell NetWare.

With the latest release of Linux kernel products from Novell such as Open Enterprise Server (OES) and Novell Linux Small Business Suite, McAfee is extending its comprehensive support to these platforms. McAfee now offers support for the latest Linux kernel, version 2.6, and support for the Novell NetWare 6.5, support pack 3.

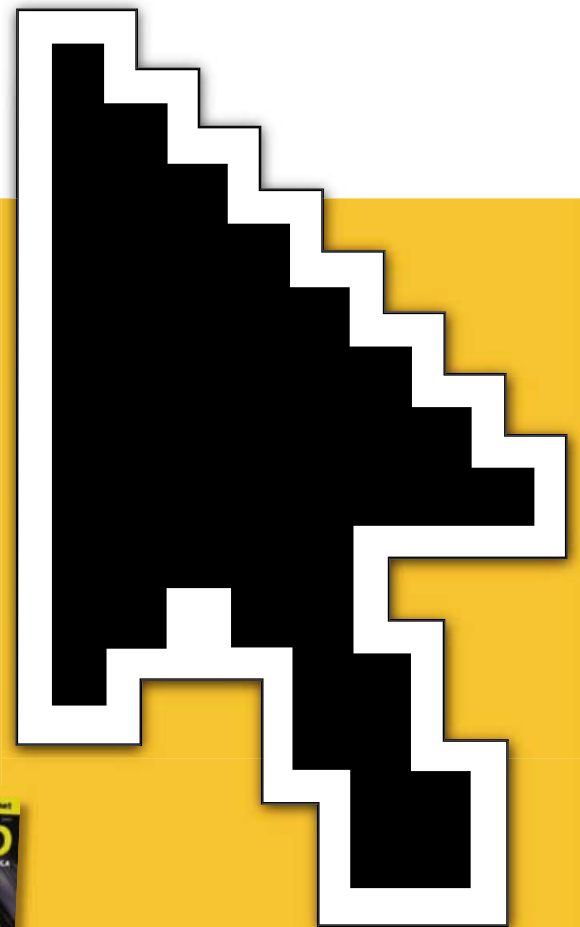
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Nokia, Apple partner on Web browser in phones

➤ Nokia is turning to open-source software developers to provide a new Web browser for smart phones based on its Series 60 mobile phone software platform.

Series 60 is a user interface layer that runs on the Symbian smart phone operating system. Nokia licenses its software to a number of companies, including LG Electronics, Lenovo Mobile, Panasonic Mobile Communications, Samsung, Sendo and Siemens AG, so the new browser could pop up all over the market.

The browser, to be included in future releases of the Series 60 software, uses two components already employed by Apple Computer in its Safari Web browser for its Mac OS X operating system.

The components are based on KHTML and KJS, two elements of the open source Konqueror Web browser. Konqueror runs on the K Desktop Environment, open-source software that

provides a graphical user interface for the Linux.

Apple and Nokia are allowed to commercialise products based on the project's source code, but must make the source code for the version they sell, including any changes or improvements, available to their customers. Apple has in the past been criticised for not contributing its changes back to the community in a usable form. It recently altered the way it makes its changes available, providing an easily-accessible on-line database of the code, although the open source software license imposed no obligation to do so.

This is not Nokia's first flirtation with the open-source software community. Last month it announced that Linux kernel developers could make use of Nokia-patented technologies under certain conditions, and said it would block the use of Nokia patents by companies that opposed use of their own patents in the Linux kernel.

Qualcomm rings up Linux

➤ Qualcomm is going to support Linux in its next-generation mobile phone chips - a move that could boost the spread of handsets with high-end computing features.

Such devices, including Research In Motion's BlackBerry and PalmOne's Treo, have become increasingly important to remote workers, and are now driving a comeback in the handheld computing market, according to a Gartner study.

Qualcomm, which created the CDMA mobile phone technology widely used in North America and Asia, said Linux support is now available for the MSM6550 system-on-a-chip. The system powers more than two dozen CDMA handset models, and includes the BREW application development platform.

The integrated chipset eliminates the need for the co-processor usually required for running a high-end operating system, and giving manufacturers a relatively inexpensive smartphone hardware platform, Qualcomm said.

Support will follow for Qualcomm chips using

the UMTS, HSDPA and CDMA2000 1X EV-DO Rev. A, the company said.

Linux is the first third-party operating system to get support on Qualcomm's processors, but it won't be the last, the company said. "We are expanding the software development environment of our chipsets to address the growing market interests for Linux as well as other third-party operating systems," said Dr. Sanjay K. Jha, President of Qualcomm CDMA Technologies.

Qualcomm joins such major companies as Motorola and DoCoMo in supporting Linux. Motorola introduced its first Linux-based handset last summer.

The open-source operating system offers the opportunity to lower development costs by collaborating with other software developers. The operating system also lacks the steep licensing fees charged by Symbian and Microsoft, which currently dominate the market. IDC has estimated Linux could control more than 4% of the smartphone OS market by 2006.

Linux PCs for \$22 a month

➤ US-based Earthlink and Microtel are offering cheap Xandros-based computers to anyone who's willing to sign up for Earthlink dial-up service at \$22 a month. The desktops on Microtel Web site start at \$70 for a basic AMD Sempron machine, Microtel laptops start at \$399. ExtremeTech says there is also a SkypeOut gift certificate: All Xandros PCs and laptops include free Skype-to-Skype calling worldwide, plus an exclusive bonus voucher for up to 120 minutes of SkypeOut calling to any phone number in the world.

New version of Win4Lin

➤ Win4Lin (formerly NeTraverse) has begun shipping the latest version of its "virtual computing environment" software that allows users to run an entire Windows operating system and associated Windows application software as a Linux process. The latest version of Win4Lin Pro "fully delivers both the Windows 2000 Operating System and Windows 2000 applications on Linux as well as early support for Windows XP," according to the company.

Unlike using WINE, which simulates a Windows OS environment on top of Linux, Win4Lin uses an actual copy of Windows to run Windows-compatible application software. Consequently, Win4Lin Pro is able to run "hundreds of thousands of Windows applications without the need for porting, re-writing or enduring erratic behaviour," the company says. Additionally, Windows OS updates from Microsoft are seamlessly incorporated.

The company says it has committed to "an aggressive update programme" that will include enhanced support for Windows XP.

Kaspersky Anti-Virus Version 5.5 for Linux.

➤ Kaspersky Lab, the security vendor, has released three new versions of Kaspersky Anti-Virus designed to protect e-mail and file servers, as well as workstations, running on the Linux, FreeBSD and Open BSD operating systems.

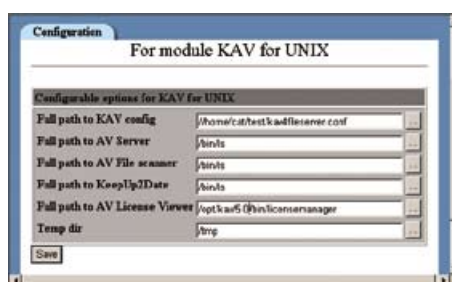
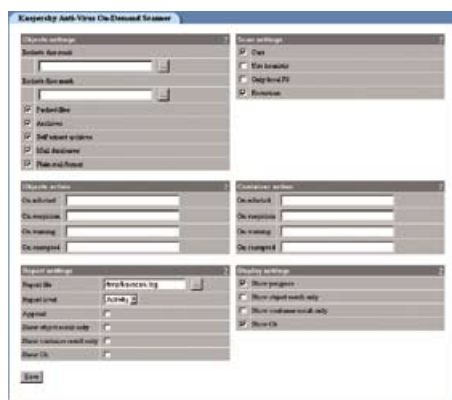
These solutions detect and neutralise malicious code in all objects on file servers, workstations and mail servers. User friendly features include flexible antivirus protection configuration and automatic uploading of antivirus database updates.

Kavmonitor (on-access scanner), a completely new component, supports real time system scanning, and identifies and quarantines all suspicious objects, thereby minimising the likelihood of malware infiltration into a network.

In the updated version, it is possible to choose between three types of antivirus databases - standard, exposed and super secure. Riskware - that is, adware and/or legal software, such as remote administration tools that can be used by hackers and other potentially hostile programs are detected using the latter two options.

New technologies have been implemented in the antivirus database and application update module, which include integrity and usability checks for downloaded databases. This reduces network traffic and improves product performance.

A number of innovations have noticeably improved productivity for the Workstation, File



Server and Mail Server solutions. The iChecker technology, first introduced by Kaspersky Lab for Windows products is now available for Linux, FreeBSD and OpenBSD as well. iChecker implements check-summing to support antivirus scanning of modified files only, which significantly decreases system load. Moreover, the option to scan the file system in background mode decreases system load even further.

Red Hat releases Directory Server

➤ Red Hat Directory Server is based on technology assets acquired by Red Hat from the Netscape Security Solutions division of America Online in September, 2004. Once proprietary, the code is now available as open source, licensed under the GPL. Red Hat Directory Server. It has been developed and packaged as an integrated, secure solution for Red Hat Enterprise Linux, the HP-UX 11i operating environment on HP Integrity and HP 9000 servers, and Sun's Solaris systems.

Paul Cormier, Executive VP of Engineering at Red Hat said: "We are announcing a massively scalable, secure, reliable, and open source directory server based on enterprise-proven technology. We are very pleased to offer customers this cost effective, high performance solution in a market where none previously existed."

Red Hat Directory Server is available using the same annual subscription model as Red Hat Enterprise Linux.



John Roberts,
CEO, Sugar CRM

Sugar Suite 3.0

➤ Sugar CRM has released a new version of its open source CRM platform, Sugar Suite, adding campaign management, e-mail marketing and forecasting tools. The new Sugar Suite Version 3.0 also introduces document management, project management, employee directory functions and easy collaboration, plus a wireless access option.

The new features of Sugar Suite 3.0 expand on the platform's core sales force automation, marketing and support functions to offer a full-featured, enterprise-class CRM solution at a fraction of the price of proprietary, closed source CRM products claims the vendor.

"Sugar 3.0 takes our CRM to the next level. With this release, we offer an open source CRM platform that can hold its own against any proprietary application with lower price and full access to the source code," says John Roberts, CEO of Sugar CRM.

Sugar Professional Edition 3.0 is available in a hosted version, Sugar On-Demand, which eliminates in-house software installation and maintenance for \$39.95 per user monthly; and on Sugar Cube, a ready-to-deploy stand-alone server that has Sugar Professional and all supporting apps.

IBM rolls out security apps for SMBs

➤ Big Blue is rolling out a series of bundled applications and managed services offerings part of its Express line of offerings.

The first solution, called the IBM Express Managed Security Services for e-mail Security, is a service aimed at SMBs to help them reduce security risks associated with e-mail that comes in over the Internet. The service scans a smaller company's e-mail off-site for spam, viruses, and other potentially dangerous material before it is allowed into their local network.

"This is a service for those companies that don't want to handle this function themselves. I think of it like a car wash where the mail goes in dirty and comes out clean on the other end," said Elaine Case, Marketing Director at IBM's Global Small and Medium Business.

The service will be priced on a per-seat per-month basis depending on the level of service needed. Pricing for between 250 and 499 seats and if all four available services are chosen, is \$4.25 per seat per month.

A second offering, called eServer OpenPower Network e-mail Security Express, focuses on malicious spam and network-based viruses on an on-demand basis.

The offering consists of IBM's eServer OpenPower 710 system with Linux, and the MPP (Message Processing Platform), the latter developed by Message Partners, an IBM business partner. MPP is an e-mail security application that features built-in archiving capabilities and works with most popular networks but does not require users to replace existing e-mail servers, company officials claimed.

The bundled product costs \$4,995 or \$144 per month for 36 months when leased, while for midsize companies the price is \$7,950 or \$237 per month when leased for 36 months.

According to the company's own research and that of industry researchers, spending on security products and services among SMBs is expected to reach \$45 b in 2006, up dramatically from the \$1.8b they spent in 2003.

Xandrops ships VOIP optimised Linux

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PlayStation 3 powered by Linux

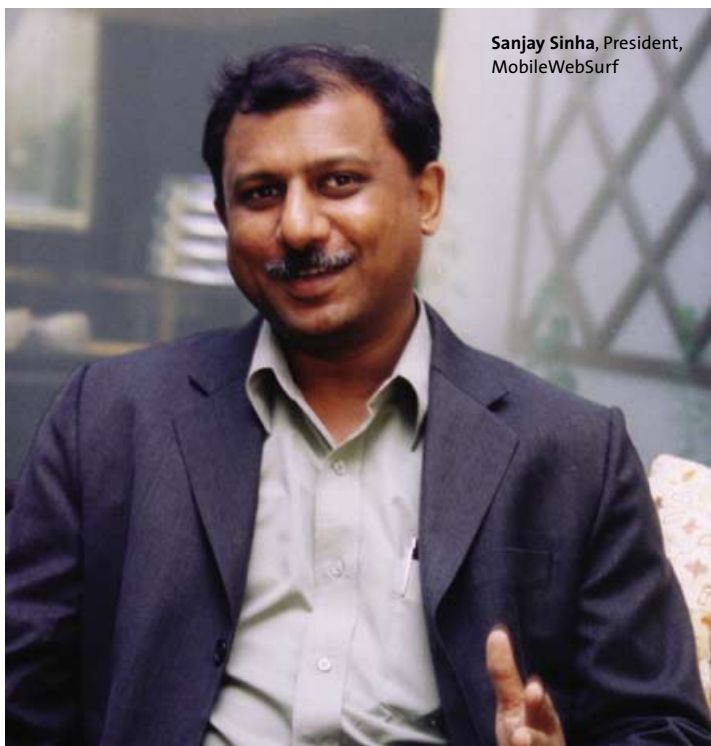
➤ Ken Kutaragi, President of Sony Computer Entertainment, has disclosed in an interview that PlayStation 3 will natively run Linux. In fact, it will come bundled with it, if you purchase the HDD peripheral." From the article: "But while Linux would require a hard drive to run on, Kutaragi told Impress PC Watch, "We're not going to equip [the PS3 with] a HDD by default, because no matter how much [capacity] we put in it, it won't be enough."

It was unclear whether he was referring to the previously known fact that the PS3 would not have an internal hard drive or whether he was indicating that the device would not come with the external 2.5-inch detachable HDD outlined in the specs revealed at E3.

Cell microprocessor powered by Linux

➤ IBM has revealed a prototype blade server board featuring the Cell microprocessor jointly developed with Sony and Toshiba. The company demonstrated the prototype at an exclusive event for select clients at the 2005 Electronic Entertainment Expo (E3), game tradeshow. "We demonstrated the prototype to show that Cell continues to mature. The product is expected to have several times higher performance compared to conventional servers," said an IBM engineer.

The prototype, called the Cell Processor Based Blade Server, measured approximately 23 x 43 cm. Each board featured two Cell processors, two 512 Mb XDR DRAM chips and two South Bridge LSIs. The Cell processors were demonstrated running at 2.4-2.8 GHz. "We are driving the Cell processors at higher rates in the laboratory," said the engineer. "If operated at 3 GHz, Cell's theoretical performance reaches about 200 GFLOPS, which works out to about 400 GFLOPS per board," he added.



Sanjay Sinha, President,
MobileWebSurf



Faruq Badiuddin,
MD, Arabetel

Linux powered push mail

Arabetel and MBC solutions launch eMOM technology

➤ Arabetel and MBC Solutions have launched eMOM for the Middle East market. eMOM, short for e-mail-on-the-move, powered by US based vendor Mobile Websurf claims to be the region's first push mail technology.

The Linux solution, allows the user to automatically and securely transfer e-mails to any mobile phone without having to download them separately. The user can download e-mail attachments at his/her own discretion and thus save on data communications costs.

The RedHat 9 Linux based eMOM enterprise gateway, provides the user real time access to mission critical data such as calendar, appointments, e-mail, directories, personal contacts, and documents from the server/desktop. The client-server based mobile e-mail solution for enterprises, supports any mobile device (GSM/GPRS) and costs less than \$10 per month per employee.

Sanjay Sinha, President of MobileWebSurf,

developers of eMOM technology says the choice of using Linux as the platform was based on several factors. "Compared to Windows, Linux is robust and stable. It also has more uptime compared to other operating systems. Creating and managing services is very easy. There are lots of free resources available for patches, and importantly it's very secure."

eMOM push e-mail is suitable for private individuals and employees from companies of all sizes due to the fact that it allows the use of MS Exchange and Lotus Domino systems as well as POP3/IMAP/Webmail accounts. This service

also works abroad and is particularly useful for traveling staff.

"I believe push mail is the next big revolution in mobile communications. Looking at the interest on this technology in the region, cost effectiveness and our service being device independent, we are expecting almost half a million subscribers in the very first year itself from Middle East," says Faruq Badiuddin, Managing Director, Arabetel. "Just as companies are free to use any type of desktop or laptop for their e-mail, they should also have the flexibility to offer mobile email access on any mobile device – with eMOM we are able to do that."

Sales of the eMOM push e-mail service will begin soon after its launch for corporate customers, and it will be available to private customers during the third quarter 2005.

"Push mail is the next big revolution in mobile communications. Looking at the interest on this technology in the region, cost effectiveness and our service being device independent, we are expecting almost half a million subscribers in the very first year itself from Middle East."

PRODUCT ANALYSIS

World's largest Internet archive powered by Linux

Capricorn Technologies Completes Shipment of 1 Petabyte System to Internet Archive.

Photo courtesy of Electronic Frontier Foundation



Brewster Kahle, Director and founder of the Internet Archive

➤ US based vendor Capricorn Technologies has reached a major milestone by completing the shipment of a full petabyte of PetaBox products to the Internet Archive.

To quantify this massive data storage solution – a petabyte is over 600 clustered storage computers with 2500 spinning disks.

Founded in 1996, the Internet Archive (IA) is a non-profit organisation seeking to provide universal access to all human knowledge. It is an on-line digital library, which includes very large collections of audio, video, texts, web sites and software. The Archive now offers over 20,000 live concerts as well as periodic snapshots of the

Internet dating back to 1996, accessible through the well-known Wayback Machine. On the whole, the IA currently hosts over 40 billion web pages.

For instance, the IA's Wayback Machine contains approximately 1 petabyte of data and is currently growing at a rate of 20 terabytes per month – this eclipses the amount of text contained in the world's largest libraries, including the Library of Congress.

Much of the Internet Archive is stored on hundreds of slightly modified x86 servers all running on the Linux operating system. Each computer has 512M/b of memory and can hold just over 1 Terabyte of data on ATA disks.

Capricorn traces its roots to the development of the PetaBox at the Internet Archive. Capricorn started as a project within the IA to develop inexpensive storage devices based on Linux and commodity PC components.

Last June, the Internet Archive announced the spinoff of Capricorn Technologies as a separate, commercial entity. The company has since supplied its PetaBox products to a number of universities, research centers, libraries, and national archives, both within the US and overseas.

"Capricorn has helped solve our critical data storage problem," says John Berry, Vice President of Engineering for the Internet Archive. "We now have more data in less space at far less cost and much higher reliability."

Capricorn's PetaBox products are based on Via mini-ITX boards running Debian or Fedora Linux, and delivers the lowest cost-per-GB and cost-of-ownership available, the company claims. Each 1U system includes a Via M-10000 mini-ITX board with a 1GHz Via C3 processor and 512M/B of memory (RAM), expandable to 1G/B. Each includes four Hitachi ATA hard drives with 8MB caches. The PetaBox is priced at approximately \$2/GB, in 40- and 64-terabyte capacities.

The IA's PetaBox installation comprises about 16 racks housing 600 systems with 2,500 spinning drives, for a total capacity of roughly 1.5 petabytes. "Despite its large size, the IA's PetaBox installation draws only about 50kW of power. It is maintained by one full- and one half-time person who spend a disproportionate amount of time working on older systems," claims C.R. Saikley, President and CEO of Capricorn Technologies.

The IA systems boot Debian or Fedora Linux from a central PXE boot server, and are remotely monitored using Nagios, a utility which tracks hard disk temperatures, CPU temperatures,



C.R. Saikley, President and CEO, Capricorn Technologies



Capricorn's Petabox solution.



Archive.org is powered by Linux.

The Internet Archive is currently growing at a rate of 20 terabytes per month – this eclipses the amount of text contained in the world's largest libraries, including the Library of Congress.

ping response, capacity utilisation and other performance units.

The PetaBox can also be managed by Linux cluster management software, according to Saikley.

Capricorn claims that its PetaBox storage devices provide the lowest ownership cost and cost-per-GB available. The company offers 40- and 64-terabyte models comprised of racks with 40 1U systems. The 1U systems are available in 1- and 1.6-terabyte models that are essentially the same but for hard-drive capacity.

According to Saikley, Capricorn is currently

positioning itself for increased production levels, following recent improvements to its manufacturing process. "The successful deployment of a full petabyte installation has proven the scalability of our solution. All along the way we have been constantly improving the efficiency and effectiveness of our manufacturing processes. By increasing production levels, we are better able to drive the cost of storage down."

www.archive.org
www.alex.com
www.petabox.org
www.capricorn-tech.com

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OPEN SOURCE ASCENDANT

By
Christopher
Koch

How Cendant Travel Distribution Services replaced a \$100m mainframe with 144 Linux servers and lived to tell about it.

“The issues raised around open source, around its viability, were in the past.”

➤ In the summer of 2003, Mickey Lutz did something that most CIOs, even today, would consider unthinkable: He moved a critical part of his IT infrastructure from the mainframe and Unix to Linux. For Lutz, the objections to Linux, regarding its technical robustness and lack of vendor support, had melted enough to justify the gamble. “The issues raised around open source, around its viability, were in the past,” recalls Lutz, CIO for Global Agency Solutions with Cendant Travel Distribution Services, the parent company of online travel brands Orbitz and CheapTickets.com.

Cendant is likewise considering 64-bit, a move that could include a transition from Red Hat to SuSE. “Linux’s ability to let companies switch vendors is good,” Wiseman said. Cost savings will continue to be a driver for Linux, but that doesn’t mitigate the need for careful testing of Linux environments before they’re placed in production, Wiseman said. This applies to other open-source applications as well.

Cendant also uses the open-source Apache Web server and Tomcat servlet container to run its CheapTickets.com operation.

Few CIOs agreed with Lutz then or now. Many CIOs are experimenting with Linux these days, but less than 10% of the Fortune 1000, according to Meta Group, have been willing to bet their core infrastructures on it—to transform the Linux penguin mascot from cute to brute.

They’ve had some good reasons for their fear of flying. For starters, the technical challenge

is significant. You need many carefully formed flocks of Linux-based Intel servers to equal the might of a single mainframe. In addition, the slow uptake of Linux in high-transaction applications has kept support for big, complex Linux environments more scarce and slightly more expensive than traditional heavy-duty platforms such as Unix and mainframes. And the savings from Linux and Intel matter less in a complex environment where applications, databases and their related support and maintenance can account for as much as 80% of the overall cost of running a system, adds Jerald Murphy, a Gartner analyst.

And it’s true that Cendant has needed every bit of support that it could get for Linux so far. Lutz’s IT group rewrote a complex, real-time airline pricing application that serves hundreds of thousands of travel agents around the world and that also acts as the system of record for all of United Airlines’ ticket reservations. When this application came up on Linux, it proved to be so demanding—it handles up to 700 pricing requests per second—that it completely redefined Cendant’s expectations about what it would take to get Linux to work. “We have broken every piece of software we’ve ever thrown at

this platform, including Linux itself,” says Lutz.

That has resulted in some scary moments, including an initial slowdown in the system that left United Airlines agents intermittently unable to access the reservation application (one outage lasted about 45 minutes) over the course of four days in July 2003. If you are United Airlines and move roughly 8,000 passengers per hour, you need the computers to work all the time. “Even a little downtime is a big deal,” admits Lutz.

But he maintains that the gamble on Linux



Mickey Lutz, CIO for Global Agency Solutions with Cendant Travel Distribution Services

Build the Case for a Linux Infrastructure

Five things to consider when deciding whether to move to open source.

1. Estimate costs and benefits of sticking with the current environment for the next one to three years.
2. Factor in the cost of servers, operations, floor space and other expenses, and the benefits of staying with a known platform and support mechanisms.
3. Conduct performance tests to determine throughput on a Linux platform using Intel servers ("Lintel"). Use this data to calculate the number and cost of servers needed to support your system over one to three years.
4. Estimate other costs – including coding, testing, support, operations and training – and benefits of using Linux.
5. Compare the costs and benefits of the current environment versus the Lintel environment, and make your call.

has been worth it. "Our business strategy is to be as efficient as possible [while] processing transactions," he says. "To do that, we have to bring down the cost of our technology." Lutz claims he has done that. A platform on the mainframe that was projected to cost \$100m now costs about \$2.5m on Linux and Intel servers.

The final hurdle for the adoption of Linux at the highest level of the corporate infrastructure is the comfort level of CIOs. Just as few CIOs are interested in first versions of software, few are ready to risk their most important applications on a technical infrastructure that most of their peers haven't embraced. Furthermore, although Linux is closely related to Unix, for a staff trained on the mainframe, the change to the Intel environment will be complete and dramatic. The morass of litigation threats and fears about the open-source model of

that has not yet been widely used for mission-critical, transaction-intensive workloads.

In other words, Linux is free, but not risk-free.

From Bleeding Edge to Leading Edge

Linux moved from bleeding edge to leading edge in Lutz's mind as Cendant looked for ways to bring down the high cost of maintaining an ancient transaction infrastructure. The pressure to save money became intolerable after the dust from the Internet bust cleared. Travel--led by brand names such as Expedia, Travelocity and Orbitz--emerged as one of the most powerful online channels left standing.

Lutz was in command of the alternative to those bright, shiny websites: an expensive, aging global distribution system (GDS) called Galileo. It is one of the original four mainframe-based travel reservation systems developed in the 1970s (the others are Amadeus, Worldspan

Savings from Linux and Intel matter less in a complex environment where applications, databases and their related support and maintenance can account for as much as 80% of the overall cost of running a system.

development and support haven't helped, even though a number of high-profile vendors--such as IBM, Hewlett-Packard and Oracle--have loudly pledged support for Linux.

That means adopting Linux is still very much a personal decision and a personal risk for CIOs. It is a chicken-and-egg game. Which comes first, adoption or vendor support? Reduction of risk or cost savings? Solid vendor support is critical, as is an internal staff capable of handling technical issues and finding answers that vendors--who don't control the development of Linux any more than CIOs do--cannot provide. Proper testing is also crucial, because Linux runs on an architecture--namely, Intel chips--

and Sabre) that travel agents access through their desktops.

A perennial also-ran to Sabre in the travel agency market, Galileo, like the other GDS relics, has lost more than 40 % of its market share in the past decade to Internet rivals--including the airlines themselves--that have lower infrastructure costs and can afford to charge smaller fees to agents and travelers, according to Morgan Stanley Analyst Christopher Gutek. "The GDSs aren't growing; they're fighting to keep from shrinking," says another analyst, James Wilson, MD at JMP Securities. "What [Galileo] has to do is keep driving its processing efficiency."

In 2001, to cut costs and to try to differentiate Galileo from its GDS rivals, the business brass authorized an update of the centerpiece of the aging Galileo infrastructure, an airfare pricing application called Galileo 360° Fares. While it was hot stuff in the '70s, Fares had fallen behind the times.

For example, it was very fast at reaching into the mainframe and retrieving flights, but it could not automatically administer any of the rules that applied to pricing the flights--such as requiring a Saturday night stay-over to qualify for a discount. Galileo IT employees had to match the rules to the flights and manually input them--thousands per day--into the system. The update would eliminate all the manual work and the errors it created and push new fares to travel agents in a fraction of the time. It would also give Galileo a leg up (temporarily, anyway) on its GDS competitors, some of whom were rushing to update their pricing software too.

Lutz also saw an opportunity to reduce the cost of the infrastructure behind Fares by moving it from the mainframe to Unix, which by then had matured enough to run the volumes and speeds necessary for Fares. At the time, Lutz looked into Linux and rejected it. "The performance of the hardware and the software just wasn't there," he recalls. Questions about finding real enterprise support and the long-term viability of the open-source model also rang in his ears.

But the Fares rewrite took time. By 2003, the outlook for Linux had changed dramatically. Linux could operate on larger systems, Intel servers were much faster and Lutz's data center provider, IBM, had emerged as the leading champion of the platform.

The technical robustness of the hardware and software and support availability all crossed an invisible baseline that Lutz (and every IT leader) has in his mind for new technologies: Lutz felt personally comfortable with it. He decided that the benefits finally outweighed the risks.

Cheaptickets.com and Orbitz.com are now powered by Open Source

"I saw many companies adopting it, and the vendor support was there," he recalls. "There are significant cost savings possible with open source, and they became far too compelling for us to ignore."

Will This Penguin Fly?

The transition of Fares to Unix was already 25 % complete, but Lutz halted it, ordering a five-person internal team to put the application through its paces on Linux servers. They would check to make sure that data flowed properly and that the servers could handle the expected speed and volume of the transactions. If Linux held up, the potential cost savings would be enormous--up to 90 % over Unix, according to Robert Wiseman, CTO for Global Agency Solutions with Cendant Travel Distribution Services.

The testing was risky, however. The Linux architecture called for the application and the data to be distributed over more than 100 servers. This model meant that the team could not build a subset of the production environment to accurately predict how the penguins would fly. That was deemed too costly and time-consuming.

The decision not to focus more on testing came back to haunt them. In June 2003, after three months of testing, Cendant moved the Fares production system to Linux. Lutz and Wiseman were at a conference in Portugal when calls started coming in, saying that the system was experiencing mysterious slowdowns.

The team had not envisioned the intensity with which Fares would crunch the data being held on multiple storage servers. For example,

The Incredible Shrinking Budget

Cendant Travel Distribution Services runs Linux on Intel servers at a fraction of the cost of either the legacy mainframe or Unix.

MAINFRAME

\$100m/year
Written in 1970s
4 IBM mainframes
Authored in TPF

UNIX

\$25m/year*
Began rewrite in 2001
100 to 120 Unix servers
Running AIX
* Estimated. The Unix-based architecture was abandoned in favor of Linux before completion.

LINUX

\$2.5m/year
Unix rewrite ported to Linux in 2001
144 servers in 12 clusters
Red Hat Linux

when travel agents asked the Fares system for a price for a ticket from Boston to Denver, they unleashed a torrent of calculations. According to Lutz, the number of possible combinations of flights and prices for all the airline carriers between two major cities has been estimated by researchers at MIT to be 10 to the 30th power. The Fares software pulls millions of different combinations out of Galileo's storage complex and calculates prices within a second.

According to Wiseman, Fares' vast appetite for data being held on the storage servers quickly created hot spots in which the demand for certain data types began to overwhelm some of the storage servers. Wiseman says that the volume and data distribution requirements of the Fares application (which he declined to identify) forced him to find a different replication solution that the original

cutover team of IBM, Red Hat and Cendant engineers brought the problems under control by throwing more servers into the mix.

"In hindsight," says Lutz, "we shouldn't have tried to cut over to a new infrastructure at the same time we were deploying a new software application. It was too much at once."

Wiseman faults the limited testing of the new system--especially the storage servers--for the failure. "We were focused on testing [the performance of Linux on] individual servers and we didn't have a full ratio of servers in the testing environment to predict the load on the storage servers," he says. Rather than falling back to the old platform at the first signs of trouble and reworking the new one, the engineers always thought the answer was around the corner.

"We always believed that the next fix

A platform on the mainframe that was projected to cost \$100m now costs about \$2.5m on Linux and Intel servers.

environment could not satisfy. Meanwhile, the application servers were literally pecking them to death with requests for data. Some slowed down to a crawl. The application slowed down with them.

Hard Lessons Learned

Frantic calls began coming in from some of the 44,000 travel agency locations in 116 countries that were unable to access Fares. Worse, because of significant outages, United Airlines' employees could not access core flight information--including schedules and connections--for as long as 45 minutes. The problems were intermittent over the course of four days. Lutz would not comment on the financial losses incurred by United or Galileo during the downtimes. Once the problem servers were pinpointed, a 40- to 50-person

would solve our problems," recalls Wiseman. "Eventually it did, of course, but not without system slowdowns and occasional time-outs during high-peak periods for the next few days." To make sure the new system would remain stable over the long haul, the team decided to re-architect it after the failures in 2003, creating about a dozen redundant clusters of 12 servers apiece, each using a new network-attached-storage architecture that Wiseman says was not utilized the first time.

Each cluster is designed to handle the full transaction load of Fares, but if demand for a particular function starts to peak, a single server no longer faces down thousands of impatient travel agents on its own. Together, the clusters are designed to handle the largest experienced Fares peak, with 25% headroom for situations such as outages and fare wars. "The

things that are most important for an environment like this are stability and availability,” says Wiseman. “We’ve designed it so that the possibility of all those clusters failing at once is so small as to be almost incomprehensible.”

The new architecture also makes testing more predictable and accurate. “We build a single complete cluster, and we can scale the results linearly,” says Wiseman. “As long as our testing on one cluster is accurate, we can predict how it will scale over the rest because they are all the same.”

Despite having to re-architect the Linux platform, Wiseman says the combination of Linux on Intel servers still saves more than 90% over Unix. All told, the platform cost for Fares for the three years beginning in 2001 went from a projected \$100 million for the mainframe to an estimated \$25m for Unix to \$2.5m for Linux, according to Lutz.

Culture Shift

Yet hardware and software don’t account for the entire picture in such an infrastructure change. “When anyone in my position makes a commitment to a new technology, it’s not simply the cost of the project, it’s the cost of everything moving forward,” says Lutz. “You’re retraining people. And so if you have a \$2m dollar project to implement a Linux system, you’re maybe making a \$10m to \$15m decision, because you’re changing the whole course of IT development—training, support [and] application development.”

The change to Linux and subsequent projects that use open source, such as Web services, has affected probably

50% of his 380-person staff, says Lutz. “Open source is propelling us to adopt Java and a new way of programming,” he says. For some of his staff, those changes haven’t been for the better, he says. “We had to reassign those who could not – or would not—move forward.”

The staff (both applications developers and systems administrators) who did make the change had to become more aggressive and intuitive in finding solutions to problems on their own. “We have to have a higher degree of technical support internally now,” says Lutz. “When you’re working with [commercial software], there are pretty standard diagnostic methods to use when things don’t work. [But] Red Hat isn’t going to give us the solution to every problem,” he adds, because it doesn’t control the core development of Linux. “My teams have to be far better technically and in their problem-solving skills than before.”

This frontier approach to problem solving has made architecture a more critical component of project planning and development, adds Lutz. “Before open source, our architects were much more involved at the beginning of the project and less at the end. Today, our architects are living with the architecture and living with the project teams, because the technology is more difficult to figure out, and the cause of problems is more difficult to diagnose.” That has driven total costs up 5% for application development and support, as Lutz has brought in more architects and more skilled support people to manage the new infrastructure. “That is an easy price to pay for free software,” he adds.



Christopher Koch is the Executive Editor of CIO magazine, an IDG publication.

Linux Without Fear

The savings from the new architecture have Cendant looking at an even more ambitious migration to Linux. The Fares application and infrastructure represent just 10 % of the Galileo computing platform. The rest houses the massive collection of flight information for every airline, every route in the world, written in a 1970s-era mainframe language called the Transaction Processing Facility (TPF). “Unlike today’s operating systems, TPF was designed almost exclusively for speed,” says Wiseman.

Wiseman has no idea how many flocks of penguins he would need to displace the polar bear mainframe, but he is looking into it. Such a move would put Galileo on the same infrastructure footing as the other pieces of Cendant Travel Distribution Services, most of which have a dotcom heritage. For example, Orbitz’s infrastructure was built from scratch on Linux.

To Lutz, Linux has achieved its goal: to become a viable alternative to proprietary operating systems. He professes no interest in, nor understanding of, the mechanics of the open-source movement. “The Linux community is still a black box to me,” he says.

The community is irrelevant to him, because the software can run his infrastructure, and he can buy enough support for it from vendors. “When I look at the constant reengineering we have to do within the travel agency business [to become more efficient], to me, there’s no other solution besides open source, given our volumes, our transaction rates and the problems we have to solve.”

The “black box” of open source has transformed into something any CIO can appreciate: reliable performance and consistent uptime. The penguin can fly now.

LAST WORD

WE SCoured THE WEB, RESEARCH JOURNALS AND ANALYST REPORTS TO GET YOU NUGGET SIZED BITES OF INFORMATION TO MAKE THE BUSINESS CASE FOR LINUX. THE NEXT TIME YOU NEED TO CONVINCE THE BOARD, HERE'S WHERE YOU WILL FIND ALL YOUR PRESENTATION ARSENAL.

35% of the software installed on personal computers worldwide was pirated in 2004,

a one percentage point decrease from 36% in 2003, BSA says. Yet, losses due to piracy increased from \$29b to \$33 b. In 2004, the world spent more than \$59b on commercial packaged PC software, up from \$51 bln in 2003. But over \$90 bln was actually installed, up from \$80 bln the year before. The increase in losses to \$33 b was, in part, the result of the fact that the PC software market grew over 6% and the US dollar fell against many of the world's currencies. With Linux and free to use software, piracy is a different matter all together.

According to IDC Linux server shipments posted their eleventh consecutive quarter of double-digit growth,

with year over year revenue growth of 35.2% and unit shipments up 31.1%.

Gartner agrees and reports that the first quarter of the year was good for servers. Not only were worldwide server shipments up by 10.7% to 1.745 million units, according to the box counters at IT market researcher Gartner, but aggregate revenues were also up by 4.1% to \$12.33b.

Research and Markets reports that between 45% and 70% of businesses have deployed Linux in some capacity.

The aggregated survey data also confirms that as of mid-2004, early adopters of Linux-based technology are planning to expand their use of Linux over the next few years. Among the key drivers of Linux adoption is its relatively low cost and favourable reputation as a stable operating system (OS), which has prompted several companies to switch to Linux during their current server upgrade cycle.

A research study comparing patch management in Microsoft Windows

with open-source software systems alleges that the costs of patching vulnerabilities is roughly the same for each. The document states that the results go against a common perception in the IT community that total costs of ownership for open source, which include patching, are lower than for Windows. The survey examined 90 companies on the subject of procedures and costs for security patch management on both Windows and Linux systems. PS: The study was sponsored by Microsoft and audited by the research firm Meta Group (owned by Gartner) and was conducted by consulting firm Wipro Technologies.

53% of the 500 North American companies

use Linux as surveyed by SG Cowen & Co, TechWeb reports. 7% of the respondents planned to adopt Linux, which was the "most modest" level the company had seen in its survey. The combined use or planned adoption of Linux at 60% was the lowest level since September 2003, when the number was 56%, including 44% having adopted Linux and 12% planning to use the open-source operating system. There was a 10% drop from September 2004, when Cowen reported 56% of companies having adopted Linux and 14% planning to deploy the operating system. 52% of companies planned to increase workloads on Windows servers, versus 7% planning a reduction. For Linux, those numbers were 50% and 10%, respectively.

Info-Tech Research Group recently ran a survey that is now being used on Microsoft's 'Get the facts' campaign.

After polling 1,400 IT managers and CIOs in SMB corporations, his group found that 48% were not interested in Linux, 15% were not sure about Linux, and only 10% plan to evaluate Linux. Despite this, two-thirds of all web servers run Linux. The disparity in these numbers comes from the fact that smaller companies' websites are hosted by service providers running Linux servers even if the company itself isn't."



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Source: Transaction Processing Council (TPC), www.tpc.org.
As of December 8, 2003: Sixteen-node HP Integrity rx5670 server cluster, each with 4 Intel(R)
Itanium(R) 2 1.5 GHz processors, 1,184,893.38 tpmC, \$5.52/tpmC, available April 30, 2004.

